

Doc. Ref. **FP56 (5 of 7)**
Appl. No. 10/553,685

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<212> PRT

<213> Homo sapiens

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| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | |
| Pro | Pro | Thr | Pro | Gly | Ile | Ser | Glu | Thr | Thr | Ser | Thr | Pro | Ala | Val | Ser | | |

3156

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| | | | | | |
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| | 1780 | | 1785 | | 1790 |
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| | | Asp | Asp | Gln | His |
| | | | Lys | Ile | Pro |
| | | | | Cys | His |
| | | | | Cys | Gly |
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<212> PRT

<213> Homo sapiens

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| | | 20 | | | | | | 25 | | | | 30 | | | |
| Arg | Ser | Arg | Ser | Leu | Ser | Arg | Ser | Arg | Lys | Arg | Arg | Leu | Ser | Ser | Arg |
| | | 35 | | | | | | 40 | | | | 45 | | | |
| Ser | Arg | Ser | Arg | Ser | Tyr | Ser | Pro | Ala | His | Asn | Arg | Glu | Arg | Asn | His |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Pro | Arg | Val | Tyr | Gln | Asn | Arg | Asp | Phe | Arg | Gly | His | Asn | Arg | Gly | Tyr |
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| Arg | Arg | Pro | Tyr | Tyr | Phe | Arg | Gly | Arg | Asn | Arg | Gly | Phe | Tyr | Pro | Trp |
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| Gly | Gln | Tyr | Asn | Arg | Gly | Gly | Tyr | Gly | Asn | Tyr | Arg | Ser | Asn | Trp | Gln |
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| Asn | Tyr | Arg | Gln | Ala | Tyr | Ser | Pro | Arg | Arg | Gly | Arg | Ser | Arg | Ser | Arg |
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| Ala | Lys | Glu | Lys | Lys | Ser | Ser | Ser | Lys | Asp | Ser | Arg | Pro | Ser | Gln | Ala |
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| Gly | Thr | Ser | Gln | Asp | Thr | Lys | Ala | Ser | Glu | Ser | Ser | Lys | Pro | Trp | Pro |
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| Glu | Leu | Ser | Pro | Arg | Glu | Arg | Ser | Pro | Ala | Leu | Lys | Ser | Pro | Leu | Gln |
| | | | 245 | | | | | | 250 | | | | | 255 | |
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 Lys Pro Phe Arg Gly Ser Gln Ser Pro Lys Arg Tyr Lys Leu Arg Asp
 405 410 415
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 Glu Leu Phe Ala Gln His Ile Val Thr Ile Val His His Val Lys Glu
 625 630 635 640
 His His Phe Gly Ser Ser Gly Met Thr Leu His Glu Arg Phe Thr Lys
 645 650 655
 Tyr Leu Lys Arg Gly Thr Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser
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 His Gly Leu Ala His Asp Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr
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 770 775 780
 Gln Ser Ser His Ser Tyr Lys Ala Glu Glu Tyr Thr Glu Glu Thr Glu

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Pro Ala Pro Pro Tyr Leu Asp His Tyr Pro Pro Tyr Leu Gln Glu Arg
65          70          75          80
Val Val Asn Ser Gln Tyr Gly Thr Gln Pro Gln Gln Tyr Pro Pro Ile
      85          90          95
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<212> PRT

<213> Homo sapiens

<400> 3996

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 Ser Leu Gln Glu Ala Gln Arg Gly Arg Ala Ala Ser His Ser Arg Ala
 65 70 75 80
 Leu Thr Leu Pro Ser Ala Leu His Phe Ala Ser Ser Leu Leu Leu Thr
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 Arg Ala Gly Ala Asn Val His Glu Ala Cys Thr Phe Asp Asp Thr Ser
 100 105 110
 Glu Gly Ala Val His Tyr Phe Tyr Asp Glu Ser Gly Val Arg Arg Ser
 115 120 125
 Tyr Thr Phe Gly Leu Ala Gly Gly Gly Tyr Glu Asn Pro Val Gly Gln
 130 135 140
 Gln Gly Glu Gln Thr Ala Asn Gly Ala Trp Asp Arg His Ser His Ser
 145 150 155 160
 Ser Ser Phe His Ser Ala Asp Val Pro Glu Ala Thr Gly Gly Leu Asn
 165 170 175
 Leu Leu Gln Pro Arg Pro Val Val Leu Gln Gly Met Gln Val Arg Arg

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 180 | | 185 | | 190 | | | | | | | | | | |
| Val | Pro | Leu | Glu | Ile | Pro | Glu | Phe | Asp | Leu | Leu | Asp | Gln | Asp | Ser | Leu |
| | 195 | | 200 | | 205 | | | | | | | | | | |
| His | Glu | Ser | Gln | Glu | Gln | Thr | Leu | Met | Glu | Glu | Ala | Pro | Pro | Arg | Ala |
| | 210 | | 215 | | 220 | | | | | | | | | | |
| Gln | His | Ser | Tyr | Lys | Tyr | Leu | Gly | Phe | Gly | Glu | | | | | |
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<210> 3997

<211> 7484

<212> DNA

<213> Homo sapiens

<400> 3997

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Glu Ala Glu Ala Phe Ala Leu Tyr His Lys Ala Leu Asp Leu Gln Lys
      35           40           45
His Asp Arg Phe Glu Glu Ser Ala Lys Ala Tyr His Glu Leu Leu Glu
      50           55           60
Ala Ser Leu Leu Arg Glu Ala Val Ser Ser Gly Asp Glu Lys Glu Gly
      65           70           75           80
Leu Lys His Pro Gly Leu Ile Leu Lys Tyr Ser Thr Tyr Lys Asn Leu
      85           90           95
Ala Gln Leu Ala Ala Gln Arg Glu Asp Leu Glu Thr Ala Met Glu Phe
      100          105          110
Tyr Leu Glu Ala Val Met Leu Asp Ser Thr Asp Val Asn Leu Trp Tyr
      115          120          125
Lys Ile Gly His Val Ala Leu Arg Leu Ile Arg Ile Pro Leu Ala Arg
      130          135          140
His Ala Phe Glu Glu Gly Leu Arg Cys Asn Pro Asp His Trp Pro Cys
      145          150          155          160
Leu Asp Asn Leu Ile Thr Val Leu Tyr Thr Leu Ser Asp Tyr Thr Thr
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Cys Leu Tyr Phe Ile Cys Lys Ala Leu Glu Lys Asp Cys Arg Tyr Ser
      180          185          190
Lys Gly Leu Val Leu Lys Glu Lys Ile Phe Glu Glu Gln Pro Cys Leu
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Arg Lys Asp Ser Leu Arg Met Phe Leu Lys Cys Asp Met Ser Ile His
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Leu Gly Glu Ser Leu Leu Ala Met Tyr Asn His Leu Thr Thr Cys Glu
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 Arg His Ser Pro Gln Val Lys Met Ala Pro Thr Ser Ser Pro Ala Glu
 2035 2040 2045
 Pro His Cys Trp Pro Ala Glu Ala Ala Leu Gly Thr Gly Ala Glu Pro
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 Thr Cys Ser Gln Glu Gly Lys Leu Arg Pro Glu Pro Arg Arg Asp Gly
 2065 2070 2075 2080
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 2100 2105 2110
 Glu Gly His Pro Gly Lys Pro Glu Pro Ser Arg Ala Lys Ser Arg Pro
 2115 2120 2125
 Leu Pro Asn Met Pro Lys Leu Val Ile Pro Ser Ala Ala Thr Lys Phe
 2130 2135 2140
 Pro Pro Glu Ile Thr Val Thr Pro Pro Thr Pro Thr Leu Leu Ser Pro

| | | | |
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| 2145 | 2150 | 2155 | 2160 |
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| | 2165 | 2170 | 2175 |
| Leu Ser Ala Gln Ser Ala Ala Asn Val Arg Lys Glu Ser Leu Cys Gln | | | |
| | 2180 | 2185 | 2190 |
| Pro Ala Leu Glu Val Leu Glu Thr Ser Ser Gln Glu Ser Ser Leu Glu | | | |
| | 2195 | 2200 | 2205 |
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<211> 2546

<212> DNA

<213> Homo sapiens

<400> 3999

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<211> 606

<212> PRT

<213> Homo sapiens

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 35 40 45
 Glu Cys Pro Asp Glu Ser Phe Ile Gln Pro Ile Cys Glu Asn Ala Thr
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 Met Glu Arg Phe Gly Pro Asp Thr Gln His Leu Val Leu Asn Glu Asn
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 Asn Leu Ile His Pro Asp Ile Phe Pro Leu Leu Thr Ser Phe Arg Cys
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 145 150 155 160
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 Ile Ile Thr Cys Asn Pro Glu Glu Phe Ile Val Glu Ala Leu Gln Leu
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 Glu Gly Thr Phe Gly Gln Leu Cys Arg His Tyr Gly Asp Gln Val Asp
 260 265 270
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 275 280 285
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 325 330 335
 Val Leu His His Ile Ser Met Ile Pro Ala Lys Cys Leu Gln Glu Gly
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 Ala Glu Ile Ser Ser Pro Ala Val Glu Arg Leu Ile Ser Ser Leu Leu
 355 360 365
 Arg Thr Cys Asp Leu Glu Glu Phe Gln Thr Cys Leu Val Arg His Cys
 370 375 380
 Lys His Ala Phe Gly Cys Ala Leu Val His Thr Ser Gly Trp Lys Val
 385 390 395 400
 Val Tyr Ser Gly Asp Thr Met Pro Cys Glu Ala Leu Val Arg Met Gly
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<213> Homo sapiens
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<212> PRT

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| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Thr | Ala | His | Ser | Gln | Ser | Ser | Pro | Glu | Phe | Lys | Gly | Ser | Leu | Ala | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Ser | Asp | Ser | Leu | Gly | Val | Ser | Val | Met | Ala | Thr | Asp | Gln | Asp | Ser |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Tyr | Ser | Thr | Ser | Ser | Thr | Glu | Glu | Leu | Glu | Gln | Phe | Ser | Ser | Pro | |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ser | Val | Lys | Lys | Lys | Pro | Ser | Met | Ile | Leu | Gly | Lys | Ala | Arg | His | Arg |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Leu | Ser | Phe | Ala | Ser | Phe | Ser | Ser | Met | Phe | His | Ala | Phe | Leu | Ser | Asn |
| | | | 85 | | | | | | 90 | | | | 95 | | |
| Asn | Arg | Lys | Leu | Tyr | Lys | Lys | Val | Val | Glu | Leu | Ala | Gln | Asp | Lys | Gly |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ser | Tyr | Phe | Gly | Ser | Leu | Val | Gln | Asp | Tyr | Lys | Val | Tyr | Ser | Leu | Glu |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Met | Met | Ala | Arg | Gln | Thr | Ser | Ser | Thr | Glu | Met | Leu | Gln | Glu | Ile | Arg |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Met | Met | Thr | Gln | Leu | Lys | Ser | Tyr | Leu | Leu | Gln | Ser | Thr | Glu | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Lys | Ala | Leu | Val | Asp | Pro | Ala | Leu | His | Ser | Glu | Glu | Glu | Leu | Glu | Ala |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Ile | Val | Glu | Ser | Ala | Leu | Tyr | Lys | Cys | Val | Leu | Lys | Pro | Leu | Lys | Glu |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Ala | Ile | Asn | Ser | Cys | Leu | His | Gln | Ile | His | Ser | Lys | Asp | Gly | Ser | Leu |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Gln | Gln | Leu | Lys | Glu | Asn | Gln | Leu | Val | Ile | Leu | Ala | Thr | Thr | Thr | Thr |
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<210> 4004

<211> 160

<212> PRT

<213> Homo sapiens

<400> 4004

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Leu Ala Leu Lys Phe Thr Cys Ser Arg Ala Lys Asp Val Ile Ile Pro
      35           40           45
Ala Lys Pro Pro Val Ser Phe Phe Ser Leu Arg Ser Pro Val Leu Asp
      50           55           60
Leu Phe Gln Gly Gln Leu Asp Tyr Ala Glu Tyr Val Arg Arg Asp Ser
65           70           75           80
Glu Val Val Leu Leu Phe Phe Tyr Ala Pro Trp Cys Gly Gln Ser Ile
      85           90           95
Ala Ala Arg Ala Glu Ile Glu Gln Ala Ala Ser Arg Leu Ser Asp Gln
      100          105          110
Val Leu Phe Val Ala Ile Asn Cys Trp Trp Asn Gln Gly Lys Cys Arg
      115          120          125
Lys Gln Lys His Phe Phe Tyr Phe Pro Val Ile Tyr Leu Tyr His Arg
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<210> 4005

<211> 666

<212> DNA

<213> Homo sapiens

<400> 4005

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<210> 4006
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<212> PRT
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35 40 45
Pro Lys Met Thr Arg Ser Lys Leu Lys Glu Val Val Glu Lys Gly Met
50 55 60
Val Ile Pro Thr Trp Asn Ile Ser Pro Ile Lys Lys Ala Asn Glu Ile
65 70 75 80
Lys Pro Pro Gln Phe Val Asp Ile His Leu Glu Glu Asp Asp Ser Ser
85 90 95
Asp Glu Glu Tyr Gln Pro Asp Asp Glu Glu Glu Asp Glu Thr Ala Glu
100 105 110
Glu Ser Leu Leu Glu Ser Asp Val Glu Ser Thr Ala Ser Ser Pro Arg
115 120 125
Gly Ala Lys Lys Ser Arg Leu Arg Gln Ser Ser Glu Met Thr Glu Thr
130 135 140
Asp Glu Glu Ser Gly Ile Leu Ser Glu Ala Glu Lys Val Thr Thr Pro
145 150 155 160
Ala Ile Arg His Ile Ser Ala Glu Val Val Pro Met Gly Pro Pro Pro
165 170 175
Pro Pro Lys Pro Lys Gln Thr Arg Asp Ser Thr Phe Met Glu Lys Leu
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His Ala Val Asp Glu Glu Leu Ala Ser Ser Pro Val Cys Met Asp Ser
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Phe Gln Pro Met Asp Asp Ser Leu Ile Ala Phe Arg Thr Arg
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<210> 4007
<211> 2313
<212> DNA
<213> Homo sapiens

<400> 4007
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<211> 290

<212> PRT

<213> Homo sapiens

<400> 4008

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 35 40 45
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 Arg Lys His Lys Lys Lys His Lys Glu Arg His Lys Met Gly Glu Glu
 65 70 75 80
 Val Ile Pro Leu Arg Val Leu Ser Lys Ser Glu Trp Met Asp Leu Lys
 85 90 95
 Lys Glu Tyr Leu Ala Leu Gln Lys Ala Ser Met Ala Ser Leu Lys Lys
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 115 120 125
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 145 150 155 160
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 165 170 175
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 180 185 190
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 195 200 205
 Glu Asp Ala Gln Ala Val Ile Asn Ala Tyr Thr Glu Ile Asn Lys Lys
 210 215 220
 His Cys Trp Lys Leu Glu Ile Leu Ser Gly Asp His Glu Gln Arg Tyr
 225 230 235 240
 Trp Gln Lys Ile Leu Val Asp Arg Gln Ala Lys Leu Asn Gln Pro Arg
 245 250 255
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 Tyr Asp
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<210> 4009
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 <212> DNA
 <213> Homo sapiens

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<210> 4010
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 35 40 45
 Pro Thr Thr Ala Ala Phe Ile Cys Asp Ser Leu Val Asn Glu Lys Thr
 50 55 60
 Ile Gly Ser Pro Pro Asn Glu Phe Tyr Cys Ser Glu Asn Thr Ser Val
 65 70 75 80
 Pro Asn Glu Ser Asn Lys Ile Leu Val Asn Lys Asp Val Pro Gln Lys

85 90 95
 Pro Gly Gly Glu Thr Thr Pro Ser Val Thr Asp Leu Leu Asn Tyr Phe
 100 105 110
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 115 120 125
 Cys Ala Ser Leu Gln Asn Ala Glu Lys Thr Met Gln Ile Thr Glu Glu
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 Pro Glu Tyr Leu Ile Leu Thr Leu Leu Arg Phe Ser Tyr Asp Gln Lys
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 Tyr His Val Arg Arg Lys Ile Leu Asp Asn Val Ser Leu Pro Leu Val
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 Leu Glu Leu Pro Val Lys Arg Ile Thr Ser Phe Ser Ser Leu Ser Glu
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 Val
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<210> 4011
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 <213> Homo sapiens

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<211> 419

<212> PRT

<213> Homo sapiens

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 Gly Ile Thr Thr Glu Gln Leu Asp Ala Leu Gly Cys Arg Ile Cys Leu
 65 70 75 80
 Gly Asn Thr Tyr His Leu Gly Leu Arg Pro Gly Pro Glu Leu Ile Gln
 85 90 95
 Lys Ala Asn Gly Leu His Gly Phe Met Asn Trp Pro His Asn Leu Leu
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 Thr Leu Cys Gly Gly Val Ser Leu Asp Ser Gly Gly Phe Gln Met Val
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 Val Val Ser Ser Thr Val Thr Gly Pro Arg Val Glu Glu Ala Met Tyr
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 Arg Ser Ile Arg Trp Leu Asp Arg Cys Ile Ala Ala His Gln Arg Pro
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540
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660

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<211> 473

<212> PRT

<213> Homo sapiens

<400> 4014

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| Glu | Tyr | Lys | Thr | Pro | Phe | Arg | Arg | Asn | Thr | Thr | Trp | His | Arg | Val | Pro |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Thr | Pro | Ala | Leu | Gln | Pro | Leu | Ser | Arg | Ala | Ser | Pro | Ile | Pro | Gly | Thr |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Pro | Asp | Arg | Leu | Pro | Cys | Gln | Gln | Leu | Leu | Gln | Gln | Ala | Gln | Ala | Ala |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ile | Pro | Arg | Ser | Thr | Ser | Phe | Asp | Arg | Lys | Leu | Pro | Asp | Gly | Thr | Arg |
| 65 | | | | 70 | | | | 75 | | | | 80 | | | |
| Ser | Ser | Pro | Ser | Asn | Gln | Ser | Ser | Ser | Ser | Asp | Pro | Gly | Pro | Gly | Gly |
| | | | 85 | | | | | 90 | | | | 95 | | | |
| Ser | Gly | Pro | Trp | Arg | Pro | Gln | Val | Gly | Tyr | Asp | Gly | Cys | Gln | Ser | Pro |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Leu | Leu | Leu | Glu | His | Gln | Gly | Ser | Gly | Pro | Leu | Glu | Cys | Asp | Gly | Ala |
| | | 115 | | | | 120 | | | | | 125 | | | | |
| Arg | Glu | Arg | Glu | Asp | Thr | Met | Glu | Ala | Ser | Arg | His | Pro | Glu | Thr | Lys |
| | 130 | | | | | 135 | | | | 140 | | | | | |
| Trp | His | Gly | Pro | Pro | Ser | Lys | Val | Leu | Gly | Ser | Tyr | Lys | Glu | Arg | Ala |
| 145 | | | | | 150 | | | | 155 | | | | 160 | | |
| Leu | Gln | Lys | Asp | Gly | Ser | Cys | Lys | Asp | Ser | Pro | Asn | Lys | Leu | Ser | His |

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Ser Asn Thr Ser Ser Asn Ser Asp Asp Lys His Phe Gly Ser Gly Asp
      195      200      205
Leu Met Asp Pro Glu Leu Leu Gly Leu Thr Tyr Ile Lys Gly Ala Ser
      210      215      220
Thr Asp Ser Gly Ile Asp Thr Ala Pro Cys Met Pro Ala Thr Ile Leu
      225      230      235      240
Gly Pro Val His Leu Ala Gly Ser Arg Ser Leu Ile His Ser Arg Ala
      245      250      255
Glu Gln Trp Ala Asp Ala Ala Asp Val Ser Gly Pro Asp Asp Glu Pro
      260      265      270
Ala Lys Leu Tyr Ser Val His Gly Tyr Ala Ser Thr Ile Ser Ala Gly
      275      280      285
Ser Ala Ala Glu Gly Ser Met Gly Asp Leu Ser Glu Ile Ser Ser His
      290      295      300
Ser Ser Gly Ser His His Ser Gly Ser Pro Ser Ala His Cys Ser Lys
      305      310      315      320
Ser Ser Gly Ser Leu Asp Ser Ser Lys Val Tyr Ile Val Ser His Ser
      325      330      335
Ser Gly Gln Gln Val Pro Gly Ser Met Ser Lys Pro Tyr His Arg Gln
      340      345      350
Gly Ala Val Asn Lys Tyr Val Ile Gly Trp Lys Lys Ser Glu Gly Ser
      355      360      365
Pro Pro Pro Glu Glu Pro Glu Val Thr Glu Cys Pro Gly Met Tyr Ser
      370      375      380
Glu Leu Asp Val Met Ser Thr Ala Thr Gln His Gln Thr Val Val Gly
      385      390      395      400
Asp Ala Val Ala Glu Thr Gln His Val Leu Ser Lys Glu Asp Phe Leu
      405      410      415
Lys Leu Met Leu Pro Asp Ser Pro Leu Val Glu Glu Gly Arg Arg Lys
      420      425      430
Phe Ser Phe Tyr Gly Asn Leu Ser Pro Arg Arg Ser Leu Tyr Arg Thr
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<210> 4015

<211> 823

<212> DNA

<213> Homo sapiens

<400> 4015

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240

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<210> 4016

<211> 95

<212> PRT

<213> Homo sapiens

<400> 4016

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Glu | Ser | Leu | Gly | Leu | Ser | Gln | Leu | Gln | Val | Lys | Thr | Trp | Tyr | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asn | Arg | Arg | Met | Lys | Trp | Lys | Lys | Ile | Val | Leu | Gln | Gly | Gly | Gly | Leu |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Glu | Ser | Pro | Thr | Lys | Pro | Lys | Gly | Arg | Pro | Lys | Lys | Asn | Ser | Ile | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Ser | Glu | Gln | Leu | Thr | Glu | Gln | Glu | Arg | Ala | Lys | Asp | Ala | Glu | Lys |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Pro | Ala | Glu | Val | Pro | Gly | Glu | Pro | Ser | Asp | Arg | Ser | Arg | Glu | Asp | |
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<210> 4017

<211> 1521

<212> DNA

<213> Homo sapiens

<400> 4017

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<211> 480

<212> PRT

<213> Homo sapiens

<400> 4018

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3195

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 <212> DNA
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<210> 4020

<211> 296

<212> PRT

<213> Homo sapiens

<400> 4020

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| 1 | | | | 5 | | | | 10 | | | | 15 | | | |
| Ser | Tyr | Val | Leu | Pro | Arg | Lys | Val | Ile | Thr | Ala | Ala | Val | Ile | Gly | Ser |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Leu | Val | Cys | Gly | Leu | Leu | Leu | Val | Ile | Ala | Leu | Gly | Cys | Thr | Cys | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Tyr | Ala | Ile | Arg | Thr | Gln | Glu | Tyr | Ser | Ile | Phe | Ala | Pro | Leu | Ser |
| | 50 | | | | | 55 | | | | | 60 | | | | |
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<212> DNA
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3198

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3202

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| 675 | 680 | 685 |
| Arg Ala Gly Glu Leu Gln Glu Ser Gln Gly Asp Gly Leu Ala Ala Ile | | |
| 690 | 695 | 700 |
| Ser Leu Tyr Leu Lys Ala Gly Leu Pro Ala Lys Ala Ala Arg Leu Val | | |
| 705 | 710 | 715 |
| Leu Thr Arg Glu Glu Leu Leu Ala Asn Thr Glu Leu Val Glu His Ile | | |
| 725 | 730 | 735 |
| Thr Ala Ala Leu Ile Lys Gly Glu Leu Tyr Glu Arg Ala Gly Asp Leu | | |
| 740 | 745 | 750 |
| Phe Glu Lys Ile His Asn Pro Gln Lys Ala Leu Glu Cys Tyr Arg Lys | | |
| 755 | 760 | 765 |
| Gly Asn Ala Phe Met Lys Ala Val Glu Leu Ala Arg Leu Ala Phe Pro | | |
| 770 | 775 | 780 |
| Val Glu Val Val Lys Leu Glu Glu Ala Trp Gly Asp His Leu Val Gln | | |
| 785 | 790 | 795 |
| Gln Lys Gln Leu Asp Ala Ala Ile Asn His Tyr Ile Glu Ala Arg Cys | | |
| 805 | 810 | 815 |
| Ser Ile Lys Ala Ile Glu Ala Ala Leu Gly Ala Arg Gln Trp Lys Lys | | |
| 820 | 825 | 830 |
| Ala Ile Tyr Ile Leu Asp Leu Gln Asp Arg Asn Thr Ala Ser Lys Tyr | | |
| 835 | 840 | 845 |
| Tyr Pro Leu Val Ala Gln His Tyr Ala Ser Leu Gln Glu Tyr Glu Ile | | |
| 850 | 855 | 860 |
| Ala Glu Glu Leu Tyr Thr Lys Gly Asp Arg Thr Lys Asp Ala Ile Asp | | |

865 870 875 880
 Met Tyr Thr Gln Ala Gly Arg Trp Glu Gln Ala His Lys Leu Ala Met
 885 890 895
 Lys Cys Met Arg Pro Glu Asp Val Ser Val Leu Tyr Ile Thr Gln Ala
 900 905 910
 Gln Glu Met Glu Lys Gln Gly Lys Tyr Arg Glu Ala Glu Arg Leu Tyr
 915 920 925
 Val Thr Val Gln Glu Pro Asp Leu Ala Ile Thr Met Tyr Lys Lys His
 930 935 940
 Lys Leu Tyr Asp Asp Met Ile Arg Leu Val Gly Lys His His Pro Asp
 945 950 955 960
 Leu Leu Ser Asp Thr His Leu His Leu Gly Lys Glu Leu Glu Ala Glu
 965 970 975
 Gly Arg Leu Gln Glu Ala Glu Tyr His Tyr Leu Glu Ala Gln Glu Trp
 980 985 990
 Lys Ala Thr Val Asn Met Tyr Arg Ala Ser Gly Leu Trp Glu Glu Ala
 995 1000 1005
 Tyr Arg Val Ala Arg Thr Gln Gly Gly Ala Asn Ala His Lys His Val
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 Ala Tyr Leu Trp Ala Lys Ser Leu Gly Gly Glu Ala Ala Val Arg Leu
 1025 1030 1035 1040
 Leu Asn Lys Leu Gly Leu Leu Glu Ala Ala Val Asp His Ala Ala Asp
 1045 1050 1055
 Asn Cys Ser Phe Glu Phe Ala Phe Glu Leu Ser Arg Leu Ala Leu Lys
 1060 1065 1070
 His Lys Thr Pro Glu Val His Leu Lys Tyr Ala Met Phe Leu Glu Asp
 1075 1080 1085
 Glu Gly Lys Phe Glu Glu Ala Glu Ala Glu Phe Ile Arg Ala Gly Lys
 1090 1095 1100
 Pro Lys Glu Ala Val Leu Met Phe Val His Asn Gln Asp Trp Glu Ala
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 Ala Gln Arg Val Ala Glu Ala His Asp Pro Asp Ser Val Ala Glu Val
 1125 1130 1135
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 1140 1145 1150
 Ala Glu Gly Leu Leu Leu Arg Ala Gln Arg Pro Gly Leu Ala Leu Asn
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 Tyr Tyr Lys Glu Ala Gly Leu Trp Ser Asp Ala Leu Arg Ile Cys Lys
 1170 1175 1180
 Asp Tyr Val Pro Ser Gln Leu Glu Ala Leu Gln Glu Glu Tyr Glu Arg
 1185 1190 1195 1200
 Glu Ala Thr Lys Lys Gly Ala Arg Gly Val Glu Gly Phe Val Glu Gln
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 Ala Arg His Trp Glu Gln Ala Gly Glu Tyr Ser Arg Ala Val Asp Cys
 1220 1225 1230
 Tyr Leu Lys Val Arg Asp Ser Gly Asn Ser Gly Leu Ala Glu Lys Cys
 1235 1240 1245
 Trp Met Lys Ala Ala Glu Leu Ser Ile Lys Phe Leu Pro Pro Gln Arg
 1250 1255 1260
 Asn Met Glu Val Val Leu Ala Val Gly Pro Gln Leu Ile Gly Ile Gly
 1265 1270 1275 1280
 Lys His Ser Ala Ala Ala Glu Leu Tyr Leu Asn Leu Asp Leu Val Lys
 1285 1290 1295
 Glu Ala Ile Asp Ala Phe Ile Glu Gly Glu Glu Trp Asn Lys Ala Lys

| | | |
|---|------|------|
| 1300 | 1305 | 1310 |
| Arg Val Ala Lys Glu Leu Asp Pro Arg Tyr Glu Asp Tyr Val Asp Gln | | |
| 1315 | 1320 | 1325 |
| His Tyr Lys Glu Phe Leu Lys Asn Gln Gly Lys Val Asp Ser Leu Val | | |
| 1330 | 1335 | 1340 |
| Gly Val Asp Val Ile Ala Ala Leu Asp Leu Tyr Val Glu Gln Gly Gln | | |
| 1345 | 1350 | 1355 |
| Trp Asp Lys Cys Ile Glu Thr Ala Thr Lys Gln Asn Tyr Lys Ile Leu | | |
| 1365 | 1370 | 1375 |
| His Lys Tyr Val Ala Leu Tyr Ala Thr His Leu Ile Arg Glu Gly Ser | | |
| 1380 | 1385 | 1390 |
| Ser Ala Gln Ala Leu Ala Leu Tyr Val Gln His Gly Ala Pro Ala Asn | | |
| 1395 | 1400 | 1405 |
| Pro Gln Asn Phe Asn Ile Tyr Lys Arg Ile Phe Thr Asp Met Val Ser | | |
| 1410 | 1415 | 1420 |
| Ser Pro Gly Thr Asn Cys Ala Glu Ala Tyr His Ser Trp Ala Asp Leu | | |
| 1425 | 1430 | 1435 |
| Arg Asp Val Leu Phe Asn Leu Ala Val Leu Ser Pro Ser Ser Val | | |
| 1445 | 1450 | 1455 |
| Lys Thr Trp Lys Ser Ser Glu Ala Asn Ser Pro Ala His Glu Glu Phe | | |
| 1460 | 1465 | 1470 |
| Lys Thr Met Leu Leu Ile Ala His Tyr Tyr Ala Thr Arg Ser Ala Ala | | |
| 1475 | 1480 | 1485 |
| Gln Ser Val Lys Gln Leu Glu Thr Val Ala Ala Arg Leu Ser Val Ser | | |
| 1490 | 1495 | 1500 |
| Leu Leu Arg His Thr Gln Leu Leu Pro Val Asp Lys Ala Phe Tyr Glu | | |
| 1505 | 1510 | 1515 |
| Ala Gly Ile Ala Ala Lys Ala Val Gly Trp Asp Asn Met Ala Phe Ile | | |
| 1525 | 1530 | 1535 |
| Phe Leu Asn Arg Phe Leu Asp Leu Thr Asp Ala Ile Glu Glu Gly Thr | | |
| 1540 | 1545 | 1550 |
| Leu Asp Gly Leu Asp His Ser Asp Phe Gln Asp Thr Asp Ile Pro Phe | | |
| 1555 | 1560 | 1565 |
| Glu Val Pro Leu Pro Ala Lys Gln His Val Pro Glu Ala Glu Arg Glu | | |
| 1570 | 1575 | 1580 |
| Glu Val Arg Asp Trp Val Leu Thr Val Ser Met Asp Gln Arg Leu Glu | | |
| 1585 | 1590 | 1595 |
| Gln Val Leu Pro Arg Asp Glu Arg Gly Ala Tyr Glu Ala Ser Leu Val | | |
| 1605 | 1610 | 1615 |
| Ala Ala Ser Thr Gly Val Arg Ala Leu Pro Cys Leu Ile Thr Gly Tyr | | |
| 1620 | 1625 | 1630 |
| Pro Ile Leu Arg Asn Lys Ile Glu Phe Lys Arg Pro Gly Lys Ala Ala | | |
| 1635 | 1640 | 1645 |
| Asn Lys Asp Asn Trp Asn Lys Phe Leu Met Ala Ile Lys Thr Ser His | | |
| 1650 | 1655 | 1660 |
| Ser Pro Val Cys Gln Asp Val Leu Lys Phe Ile Ser Gln Trp Cys Gly | | |
| 1665 | 1670 | 1675 |
| Gly Leu Pro Ser Thr Ser Phe Ser Phe Gln | | |
| 1685 | 1690 | |

<210> 4025

<211> 908

<212> DNA

<213> Homo sapiens

<400> 4025

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 120
 aaccagtgtt ttcacgtttt cgcaccagt tgtaacctta aaagccacaa gaggattcac
 180
 acgggggaga atcaccatga atgtaatcag tgtggaaaag ctttcagcac aaggctctct
 240
 ctactgggc acaattgcat tcatacaggg gagaaacctt atgaatgtaa ggaatgtggg
 300
 aaaaccttta tgtataattc atcccttatt caacatctga gaactcatac tggagagaaa
 360
 ccctatgaat gtaaggagtg tgggaaagcc tttaggcaac attcacacct tgtcacacac
 420
 cagaaaatcc atactggaga gaagccctat cagtgcactg aatgtgggaa agccttcagg
 480
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 gagnagcaga aaattcacca agaagagaaa gcttattggt gtaatcagtg tggtaggggt
 720
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 780
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<210> 4026

<211> 302

<212> PRT

<213> Homo sapiens

<400> 4026

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 20 25 30
 Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Phe His Val Phe Arg
 35 40 45
 Thr Ser Cys Asn Leu Lys Ser His Lys Arg Ile His Thr Gly Glu Asn
 50 55 60
 His His Glu Cys Asn Gln Cys Gly Lys Ala Phe Ser Thr Arg Ser Ser
 65 70 75 80
 Leu Thr Gly His Asn Cys Ile His Thr Gly Glu Lys Pro Tyr Glu Cys
 85 90 95
 Lys Glu Cys Gly Lys Thr Phe Met Tyr Asn Ser Ser Leu Ile Gln His

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<210> 4027
<211> 941
<212> DNA
<213> Homo sapiens
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120
ggattgattc agatgggatg tgttttccag agcacagaag tgaaacacgt gaccaaggta
180
gaatggatat tttcaggacg gcgcgcaaag gaggagattg tatttcgtta ctaccacaaa
240
ctcaggatgt ctgcggagta ctcccagagc tggggccact tccagaatcg tgtgaacctg
300
gtgggggaca ttttccgcaa tgacggttcc atcatgcttc aaggagtggag ggagtcagat
360
ggaggaaact acacctgcag tatccacctt gggaaacctgg tgttcaagaa aaccattgtg
420
ctgcatgtca gcccggaaga gcctcgaaca ctggtgacct cggcagccct gaggcctctg
480
gtcttgggtg gtaatcagtt ggtgatcatt gtgggaattg tctgtgccac aatcctgctg
540
ctcctgttc tgatattgat cgtgaagaag acctgtggaa ataagagttc agtgaattct
600
acagtcttgg tgaagaacac gaagaagact aatccagaga tgaaagaaaa acctgccat
660

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tttgaaagat gtgaagggga ggtgaacaca cgcttcagcc taaaacacta agtagatgca
 720
 ggccctggggcc gttctcatat ccccggggaac catatcttac ccattgtatg tcgcagcttg
 780
 caggccagtg cttggcacag agcaggggact caggaagcct ttgtcactaa agtaagagcc
 840
 tctgcggagt acagtgcatt gggtcggctg ggacaccccc aggcagcaga tcctgggtatt
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 941

<210> 4028

<211> 236

<212> PRT

<213> Homo sapiens

<400> 4028

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Gln | Gly | Thr | Tyr | Ile | Cys | Glu | Ile | Arg | Leu | Lys | Gly | Glu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Val | Phe | Lys | Lys | Ala | Val | Val | Leu | His | Val | Leu | Pro | Glu | Glu | Pro |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Lys | Glu | Leu | Met | Val | His | Val | Gly | Gly | Leu | Ile | Gln | Met | Gly | Cys | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | Gln | Ser | Thr | Glu | Val | Lys | His | Val | Thr | Lys | Val | Glu | Trp | Ile | Phe |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ser | Gly | Arg | Arg | Ala | Lys | Glu | Glu | Ile | Val | Phe | Arg | Tyr | Tyr | His | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Leu | Arg | Met | Ser | Ala | Glu | Tyr | Ser | Gln | Ser | Trp | Gly | His | Phe | Gln | Asn |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Arg | Val | Asn | Leu | Val | Gly | Asp | Ile | Phe | Arg | Asn | Asp | Gly | Ser | Ile | Met |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Gln | Gly | Val | Arg | Glu | Ser | Asp | Gly | Gly | Asn | Tyr | Thr | Cys | Ser | Ile |
| | | 115 | | | | | 120 | | | | | | 125 | | |
| His | Leu | Gly | Asn | Leu | Val | Phe | Lys | Lys | Thr | Ile | Val | Leu | His | Val | Ser |
| | 130 | | | | | | 135 | | | | | 140 | | | |
| Pro | Glu | Glu | Pro | Arg | Thr | Leu | Val | Thr | Pro | Ala | Ala | Leu | Arg | Pro | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Val | Leu | Gly | Gly | Asn | Gln | Leu | Val | Ile | Ile | Val | Gly | Ile | Val | Cys | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Thr | Ile | Leu | Leu | Leu | Pro | Val | Leu | Ile | Leu | Ile | Val | Lys | Lys | Thr | Cys |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Asn | Lys | Ser | Ser | Val | Asn | Ser | Thr | Val | Leu | Val | Lys | Asn | Thr | Lys |
| | | 195 | | | | | 200 | | | | | | 205 | | |
| Lys | Thr | Asn | Pro | Glu | Met | Lys | Glu | Lys | Pro | Cys | His | Phe | Glu | Arg | Cys |
| | 210 | | | | | | 215 | | | | | 220 | | | |
| Glu | Gly | Glu | Val | Asn | Thr | Arg | Phe | Ser | Leu | Lys | His | | | | |
| 225 | | | | | 230 | | | | | | 235 | | | | |

<210> 4029

<211> 909

<212> DNA

<213> Homo sapiens

<400> 4029

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 120
 ctacatgctg ctgctggtgc tgccgtgctg ggcgctcagc gaggtcagca tgcagggcga
 180
 gcacatagcg ccgcagaaga tgatgctgta cccggtgctc agtctcgcca ccgtcaatgt
 240
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 300
 ccattcttctg cggaacaaac gtggtggcgcg tcgccaccaa ggctgcacc tntctctgga
 360
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 420
 ccacccccgc agcgcaactc ggtgccgccc ccgcgcccgc cgctgcacgg cccgcctggg
 480
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 600
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 660
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 720
 accagcccgc cccagcgctg ggtctgttt gggaggcctg ggccggagca gagcagaggt
 780
 gatccggccc ctgcctgctg ggccgcccgg gttggaaggg agggcagtgt gggcggagat
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 909

<210> 4030

<211> 169

<212> PRT

<213> Homo sapiens

<400> 4030

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Pro | Pro | Val | Leu | Gly | Gly | Ala | Gly | Pro | Ala | Gly | Pro | Ala | Gly | His |
| 1 | | | | 5 | | | | 10 | | | | 15 | | | |
| Ala | Gly | Gln | Pro | Val | Gly | Ala | Ala | Ala | Leu | Arg | Ala | Ala | Ala | Val | Gly |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Arg | Gly | Pro | His | Leu | Leu | Leu | Leu | His | Ala | Ala | Ala | Gly | Ala | Ala | |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Val | Arg | Gly | Ala | Gln | Arg | Gly | Gln | His | Ala | Gly | Arg | Ala | His | Ser | Ala |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Ala | Glu | Asp | Asp | Ala | Val | Pro | Gly | Ala | Gln | Ser | Arg | His | Arg | Gln | Cys |
| 65 | | | | 70 | | | | 75 | | | | | | 80 | |
| Gly | Gly | Pro | Cys | Trp | Arg | Ala | Pro | Pro | Thr | Trp | Arg | Cys | Ser | Gly | Thr |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Ala | Val | Ser | Arg | Pro | Ser | Ser | Ser | Ala | Lys | Thr | Trp | Trp | Arg | Ser | Pro |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| Pro | Arg | Pro | Ala | Pro | Xaa | Pro | Gly | Val | Pro | Pro | Pro | Gly | Ala | Arg | Leu |

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| | 115 | | 120 | | 125 | |
| Pro | Xaa | Pro | Pro | Ala | Leu | Ser |
| | 130 | | 135 | | 140 | |
| Arg | Asn | Ser | Val | Pro | Pro | Pro |
| 145 | | | 150 | | 155 | |
| Xaa | Pro | Pro | His | Val | Leu | Ala |
| | | | 165 | | | |

<210> 4031
 <211> 1406
 <212> DNA
 <213> Homo sapiens

<400> 4031
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 120
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 180
 actacagctg caagaacttt tccagataaa aaggaacgtg aagaaatata gactttaaaa
 240
 cagcaaatag cagatttacg ggaagatttg aaaagaaagg agaccaaata gtcaagtaca
 300
 cacagccgtc tcagaagcca gatacaaatg ttagtcagag agaacacaga cctccgggaa
 360
 gaaataaaaag tgatggaaaag attccgactg gatgcctgga agagagcaga agccatagag
 420
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 480
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 540
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 600
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 660
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 720
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 780
 gtgagtgcag atgggaagac catcactgtc actttcttta atggtgacgt gaagcaggtc
 840
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 900
 ccggaggggac tggaagtctt acattttctca agtggacaaa tagaaaaaca ttaccagat
 960
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 1020
 gaagaaagca ttttcccaga tgggtacaatt gtcagagtac aacgtgatgg caacaaactc
 1080
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 1140
 ccagatggca ctgttaaaac cgtatatgca aacggtcac aagaaacgaa gtacagatcc
 1200

ggtcggataa gagttaagga caaggagggt aatgtgctaa tggacacgga gctgtgacga
 1260
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 1320
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 1380
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 1406

<210> 4032

<211> 418

<212> PRT

<213> Homo sapiens

<400> 4032

| | | | | | | | | | | | | | | | |
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| Xaa | Ala | Glu | Asn | Ala | Ser | Leu | Ala | Lys | Leu | Arg | Ile | Glu | Arg | Glu | Ser |
| 1 | | | 5 | | | | | 10 | | | | | | 15 | |
| Ala | Leu | Glu | Lys | Leu | Arg | Lys | Glu | Ile | Ala | Gly | Phe | Glu | Gln | Gln | Lys |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Ala | Lys | Glu | Leu | Ala | Arg | Ile | Glu | Glu | Phe | Lys | Lys | Glu | Glu | Met | Arg |
| | 35 | | | | | 40 | | | | | | 45 | | | |
| Lys | Leu | Gln | Lys | Glu | Arg | Lys | Val | Phe | Glu | Lys | Tyr | Thr | Thr | Ala | Ala |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Arg | Thr | Phe | Pro | Asp | Lys | Lys | Glu | Arg | Glu | Glu | Ile | Gln | Thr | Leu | Lys |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Gln | Gln | Ile | Ala | Asp | Leu | Arg | Glu | Asp | Leu | Lys | Arg | Lys | Glu | Thr | Lys |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Trp | Ser | Ser | Thr | His | Ser | Arg | Leu | Arg | Ser | Gln | Ile | Gln | Met | Leu | Val |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Arg | Glu | Asn | Thr | Asp | Leu | Arg | Glu | Glu | Ile | Lys | Val | Met | Glu | Arg | Phe |
| | 115 | | | | | 120 | | | | | | 125 | | | |
| Arg | Leu | Asp | Ala | Trp | Lys | Arg | Ala | Glu | Ala | Ile | Glu | Ser | Ser | Leu | Glu |
| | 130 | | | | 135 | | | | | | 140 | | | | |
| Val | Glu | Lys | Lys | Asp | Lys | Leu | Ala | Asn | Thr | Ser | Val | Arg | Phe | Gln | Asn |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Ser | Gln | Ile | Ser | Ser | Gly | Thr | Gln | Val | Glu | Lys | Tyr | Lys | Lys | Asn | Tyr |
| | | | 165 | | | | 170 | | | | | | | 175 | |
| Leu | Pro | Met | Gln | Gly | Asn | Pro | Pro | Arg | Arg | Ser | Lys | Ser | Ala | Pro | Pro |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Arg | Asp | Leu | Gly | Asn | Leu | Asp | Lys | Gly | Gln | Ala | Ala | Ser | Pro | Arg | Glu |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Pro | Leu | Glu | Pro | Leu | Asn | Phe | Pro | Asp | Pro | Glu | Tyr | Lys | Glu | Glu | Glu |
| | 210 | | | | 215 | | | | | | | 220 | | | |
| Glu | Asp | Gln | Asp | Ile | Gln | Gly | Glu | Ile | Ser | His | Pro | Asp | Gly | Lys | Val |
| 225 | | | | 230 | | | | | | 235 | | | | 240 | |
| Glu | Lys | Val | Tyr | Lys | Asn | Gly | Cys | Arg | Val | Ile | Leu | Phe | Pro | Asn | Gly |
| | | | 245 | | | | 250 | | | | | | | 255 | |
| Thr | Arg | Lys | Glu | Val | Ser | Ala | Asp | Gly | Lys | Thr | Ile | Thr | Val | Thr | Phe |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| Phe | Asn | Gly | Asp | Val | Lys | Gln | Val | Met | Pro | Asp | Gln | Arg | Val | Ile | Tyr |
| | 275 | | | | | 280 | | | | | | 285 | | | |
| Tyr | Tyr | Ala | Ala | Ala | Gln | Thr | Thr | His | Thr | Thr | Tyr | Pro | Glu | Gly | Leu |
| | 290 | | | | 295 | | | | | | 300 | | | | |
| Glu | Val | Leu | His | Phe | Ser | Ser | Gly | Gln | Ile | Glu | Lys | His | Tyr | Pro | Asp |

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305          310          315          320
Gly Arg Lys Glu Ile Thr Phe Pro Asp Gln Thr Val Lys Asn Leu Phe
          325          330          335
Pro Asp Gly Gln Glu Glu Ser Ile Phe Pro Asp Gly Thr Ile Val Arg
          340          345          350
Val Gln Arg Asp Gly Asn Lys Leu Ile Glu Phe Asn Asn Gly Gln Arg
          355          360          365
Glu Leu His Thr Ala Gln Phe Lys Arg Arg Glu Tyr Pro Asp Gly Thr
          370          375          380
Val Lys Thr Val Tyr Ala Asn Gly His Gln Glu Thr Lys Tyr Arg Ser
385          390          395          400
Gly Arg Ile Arg Val Lys Asp Lys Glu Gly Asn Val Leu Met Asp Thr
          405          410          415
Glu Leu

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<210> 4033
 <211> 487
 <212> DNA
 <213> Homo sapiens

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<400> 4033
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120
tcaagaagag cctcctagt ttggcctcta actggctgtg cgacccagc caggtcactt
180
gtcctctctg ggaagcagct gaataatgaa cactgggatt ttcccaggct ggcttctcac
240
tgcagagcag aggaagagca ttctgggggc ctgctatgga gggtcattta tccagtttac
300
aacttccacg gccggccctc aatggcttcc tttctctccc acaagagcgc tgggccaagc
360
cagctctgca ccagttggac gccttccaag aaaaactcag gctccggggg ctgcttgta
420
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480
ccagtcc
487

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<210> 4034
 <211> 94
 <212> PRT
 <213> Homo sapiens

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<400> 4034
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Lys Ser Ile Leu Gly Ala Cys Tyr Gly Gly Ser Phe Ile Gln Phe Thr
20     25     30
Thr Ser Thr Ala Gly Pro Gln Trp Leu Pro Phe Ser Pro Thr Arg Ala
35     40     45
Leu Gly Gln Ala Ser Ser Ala Pro Val Gly Arg Leu Pro Arg Lys Thr

```

50 55 60
 Gln Ala Pro Gly Ala Ala Cys Gln Asp Gln Thr Gly Gly Leu Ala Pro
 65 70 75 80
 Pro Pro Ala Met Cys Gly Glu Arg Ala Ser Pro Ser Gln Ser
 85 90

<210> 4035
 <211> 343
 <212> DNA
 <213> Homo sapiens

<400> 4035
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 120
 tcctatggga gggacaaact ctcaaaaaat agcaagagta ttttgaatc ctatctgagg
 180
 tataaacact cagaacctca tagcagtgtt caggaatcct atgtgaggga caaacattca
 240
 gaccacagca ggagcattct agaatcctat ttgaggaaca aacattcaga caatcgtagc
 300
 agtgttcttg aatccttttt ttttttgaag ctttcaatct ctt
 343

<210> 4036
 <211> 114
 <212> PRT
 <213> Homo sapiens

<400> 4036
 Xaa Leu Asn Ser Ser Val Met Glu Phe His Val Arg His Lys His Ser
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 Asp Asn Pro Ser Asn Val Leu Glu Ser Tyr Val Arg Asp Lys His Ser
 20 25 30
 Asp Pro Ser Ser Asn Val Leu Glu Ser Tyr Gly Arg Asp Lys Leu Ser
 35 40 45
 Glu Asn Ser Lys Ser Ile Leu Glu Ser Tyr Leu Arg Tyr Lys His Ser
 50 55 60
 Glu Pro His Ser Ser Val Gln Glu Ser Tyr Val Arg Asp Lys His Ser
 65 70 75 80
 Asp His Ser Arg Ser Ile Leu Glu Ser Tyr Leu Arg Asn Lys His Ser
 85 90 95
 Asp Asn Arg Ser Ser Val Leu Glu Ser Phe Phe Phe Leu Lys Leu Ser
 100 105 110
 Ile Ser

<210> 4037
 <211> 741
 <212> DNA
 <213> Homo sapiens

<400> 4037

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 120
 ggaggagaag gggttggtct tgctgtctca gggcggcaga ggcagaagag aatctgagca
 180
 tacgtggacc tgtagccagg tgggcataga taaaaggaaa tattgtttgc cagtccctgc
 240
 tggaatgatg cctttacaca tctgtctgat ctgattgtct cactgttttc tgacttctct
 300
 tccctttcca gggttctagc ctgttcatct agcccatga tggctgtgga catcgagtac
 360
 agatacaact gcatggctcc ttccttgccg caagagaggt ttgcctttaa gatctcacca
 420
 aagcccagca aaccactgag gccttgtatt cagctgagca gcaagaatga agccagtgga
 480
 atgggtggccc cggctgtcca ggagaagaag gtgaaaaagc ggggtgtcctt cgcagacaac
 540
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 600
 ccattcaaca tcaccgagct cctagacaac attgtgagct tgacgacagc agagagcgag
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 720
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 741

<210> 4038

<211> 134

<212> PRT

<213> Homo sapiens

<400> 4038

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Asp | Ile | Glu | Tyr | Arg | Tyr | Asn | Cys | Met | Ala | Pro | Ser | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Arg | Gln | Glu | Arg | Phe | Ala | Phe | Lys | Ile | Ser | Pro | Lys | Pro | Ser | Lys | Pro |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Arg | Pro | Cys | Ile | Gln | Leu | Ser | Ser | Lys | Asn | Glu | Ala | Ser | Gly | Met |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Val | Ala | Pro | Ala | Val | Gln | Glu | Lys | Lys | Val | Lys | Lys | Arg | Val | Ser | Phe |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Ala | Asp | Asn | Gln | Gly | Leu | Ala | Leu | Thr | Met | Val | Lys | Val | Phe | Ser | Glu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Phe | Asp | Asp | Pro | Leu | Asp | Met | Pro | Phe | Asn | Ile | Thr | Glu | Leu | Leu | Asp |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asn | Ile | Val | Ser | Leu | Thr | Thr | Ala | Glu | Ser | Glu | Ser | Phe | Val | Leu | Asp |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| Phe | Ser | Gln | Pro | Ser | Ala | Asp | Tyr | Leu | Asp | Phe | Arg | Asn | Arg | Leu | Gln |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ala | Asp | His | Val | Cys | Leu | | | | | | | | | | |
| | | | 130 | | | | | | | | | | | | |

<210> 4039

<211> 1503

<212> DNA

<213> Homo sapiens

<400> 4039

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120
gagcgaggag ccctcgacg cgctagtctg cgagtgageg ctcagcccgg cacctgttcc
180
tccagcgccg ccgccttccc acccctcgga ccgcgcgcg tcgaggcgcc cgcccgttcc
240
tgcgatgaat ccggccctag gcaaccagac ggacgtggcg ggcccttcctg gccaacagca
300
gcgaggcgct ggagcgagcc gtgcgctgct gcacccaggc gtccgtggtg accgacgacg
360
gcttcgcgga gggaggcccg gacgagcgta gcctgtacat aatgcgcgtg gtgcagatcg
420
cggtcagtgt cgtgctctca ctacccgtgg tcttcggcat cttcttcctc ggctgcaatc
480
tgctcatcaa gtccgagggc atgatcaact tcctcgtgaa ggaccggagg ccgtctaagg
540
agtgaggagg ggtggtcgtg gggccctact gacccgccct ctgccccgc ggcaaccgct
600
cccacgcctg ccactttgc tagcccggt gtgccctca ctatcagaga ctgggccaag
660
caaacctgtc ggagtcaatt atttctctcg acttcggcct ttcggaaaga agcgaccggt
720
ttctccctcg ccctctgaaa gtccctcatgc ctggcagtcg gaggagagcg ccagactct
780
gaactcagca gaaagtggca agaagagggc gattagggcg cagaactttg gaagctgcta
840
cttacttggg atgcggggag accgacggtg cgaaggccct tctccaccg caggaggggc
900
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960
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1020
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1080
gataaatacc tttgattgta acgtgccgtt ttaagagggt ttgtgtttgt ttgcttgaat
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acaaatgttt gataagtctt tttctgccc agtggcctgt ttgcctgcct gaggagtta
1200
agttttgtca ttgtggaaga aggggtgggg ggagggggag cctgcgaatt tgaacgggg
1260
gagttgtttc ttttagtgca tttccactg ggtcttttgg gaggcgtcta gcgttcctgc
1320
tgcccctggg acaaagaccc agaatagaac tcgtagctcg tgactgcacg gtttacgcca
1380
caaaagtgtc cttgacatcc gtgacaccgt tttgactttt tgtttttttc ttatttaaca
1440
tttccttaat aaatgcaaca ttttagcggt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1500

aaa
1503

<210> 4040
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4040
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Thr Ala Gln Gly Leu Ser Lys Ala Glu Arg Gly Ala Leu Ala Arg Ala
20 25 30
Ser Leu Arg Val Ser Ala Gln Pro Gly Thr Cys Ser Ser Ser Ala Ala
35 40 45
Ala Phe Pro Pro Leu Gly Pro Ala Pro Leu Ala Ala Pro Ala Arg Ser
50 55 60
Cys Asp Glu Ser Gly Pro Arg Gln Pro Asp Gly Arg Gly Gly Pro Ser
65 70 75 80
Trp Pro Thr Ala Ala Arg Arg Trp Ser Glu Pro Cys Ala Ala Ala Pro
85 90 95
Arg Arg Pro Trp
100

<210> 4041
<211> 573
<212> DNA
<213> Homo sapiens

<400> 4041
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60
ggtgagattc cagctgaatt aagggcgggc gccactgacc accggcagga gctaattgaa
120
tgtgttgcca attcagatga acagcttggt gagatgtttc tggaagaaaa aatcccctcg
180
atttctgatt taaagctagc aattcgaaga gctactctga aaagatcatt tactcctgta
240
tttttgggaa ggcgcttgaa gaacaaagga gttcagcctc ttttagatgc tgttttagaa
300
tacctcccaa atccatctga agtccagaac tatgctattc tcaataaaga ggatgactca
360
aaagagaaaa ccaaaatcct aatgaactcc agtagagaca attcccaccc atttgtaggc
420
ctggctttta aactggaggt aggtcgattt ggacaattaa cttatgttcg cagttatcag
480
ggagagctaa agaagggtga caccatctat aacacaagga caagaaagaa agtacgggtg
540
caacggctgg ctgcgatgca tgccgacatg atg
573

<210> 4042
<211> 191
<212> PRT

<213> Homo sapiens

<400> 4042

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Asp Leu Ile Glu Glu Arg Ala Ile Tyr Phe Asp Gly Asp Phe Gly Gln
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Ile Val Arg Tyr Gly Glu Ile Pro Ala Glu Leu Arg Ala Ala Ala Thr
          20           25           30
Asp His Arg Gln Glu Leu Ile Glu Cys Val Ala Asn Ser Asp Glu Gln
          35           40           45
Leu Gly Glu Met Phe Leu Glu Glu Lys Ile Pro Ser Ile Ser Asp Leu
          50           55           60
Lys Leu Ala Ile Arg Arg Ala Thr Leu Lys Arg Ser Phe Thr Pro Val
65           70           75           80
Phe Leu Gly Ser Ala Leu Lys Asn Lys Gly Val Gln Pro Leu Leu Asp
          85           90           95
Ala Val Leu Glu Tyr Leu Pro Asn Pro Ser Glu Val Gln Asn Tyr Ala
          100          105          110
Ile Leu Asn Lys Glu Asp Asp Ser Lys Glu Lys Thr Lys Ile Leu Met
          115          120          125
Asn Ser Ser Arg Asp Asn Ser His Pro Phe Val Gly Leu Ala Phe Lys
          130          135          140
Leu Glu Val Gly Arg Phe Gly Gln Leu Thr Tyr Val Arg Ser Tyr Gln
145          150          155          160
Gly Glu Leu Lys Lys Gly Asp Thr Ile Tyr Asn Thr Arg Thr Arg Lys
          165          170          175
Lys Val Arg Leu Gln Arg Leu Ala Arg Met His Ala Asp Met Met
          180          185          190

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<210> 4043

<211> 744

<212> DNA

<213> Homo sapiens

<400> 4043

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120
ctcccaaaaa aagacccaaa agttaaaggt gtccaatcag cagctgtaca agcttttctt
180
aaaaggaaaag aagaggagct gagacgaaaa gccttagagg agaaaaggag aaaagaggaa
240
ctagtgaaaa agcgaattga gctcaaacat gacaagaaa caagagctat ggccaagagg
300
acaaaggata atttccatgg ttacaatggg attcctattg aggaaaagtc aaagaagagg
360
caggcaacag aaagccatac cagccaagga accgaccgag agtatgaaat ggaagaagag
420
aatgaattcc tcgagtacaa tcacgcagag tcagagcagg agtatgagga agagcaagaa
480
cctcccaaaag ttgaaagcaa accaaaggtc tcccttaaag gtgccccacc acctatgaac
540
ttcactgatt tactcaggct ggctgagaaa aagcagtttg aaccagtggg aatcaaggta
600

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gtgaagaaat cagaagagcg acctatgacc gcagaagaac ttagggagcg agaattcctt
 660
 gaacgaaagc ataggagaaa aaaacttgag acagatggaa aactacctcc aactgtgtcc
 720
 aaaaaggcac ctctcggacg gaag
 744

<210> 4044
 <211> 219
 <212> PRT
 <213> Homo sapiens

<400> 4044
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 20 25 30
 Arg Lys Glu Glu Glu Leu Arg Arg Lys Ala Leu Glu Glu Lys Arg Arg
 35 40 45
 Lys Glu Glu Leu Val Lys Lys Arg Ile Glu Leu Lys His Asp Lys Lys
 50 55 60
 Ala Arg Ala Met Ala Lys Arg Thr Lys Asp Asn Phe His Gly Tyr Asn
 65 70 75 80
 Gly Ile Pro Ile Glu Glu Lys Ser Lys Lys Arg Gln Ala Thr Glu Ser
 85 90 95
 His Thr Ser Gln Gly Thr Asp Arg Glu Tyr Glu Met Glu Glu Glu Asn
 100 105 110
 Glu Phe Leu Glu Tyr Asn His Ala Glu Ser Glu Gln Glu Tyr Glu Glu
 115 120 125
 Glu Gln Glu Pro Pro Lys Val Glu Ser Lys Pro Lys Val Ser Leu Lys
 130 135 140
 Gly Ala Pro Pro Pro Met Asn Phe Thr Asp Leu Leu Arg Leu Ala Glu
 145 150 155 160
 Lys Lys Gln Phe Glu Pro Val Glu Ile Lys Val Val Lys Lys Ser Glu
 165 170 175
 Glu Arg Pro Met Thr Ala Glu Glu Leu Arg Glu Arg Glu Phe Leu Glu
 180 185 190
 Arg Lys His Arg Arg Lys Lys Leu Glu Thr Asp Gly Lys Leu Pro Pro
 195 200 205
 Thr Val Ser Lys Lys Ala Pro Leu Gly Arg Lys
 210 215

<210> 4045
 <211> 2217
 <212> DNA
 <213> Homo sapiens

<400> 4045
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 120
 aattgaaaaa aacttagaat tttaaagctg agaaagagtt atcgctgtga tgattttgtg
 180

gttaatgaca ccaagctggg actggtacag aaagtcagag aacacttaca gaacttggaa
240
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300
aacagcaagt tattaaagt aaatggaagc accactgcca tttgtgccac aggccttcgg
360
aatttgggga acacatgttt catgaatgcc atccttcagt cactcagtaa cattgagcag
420
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480
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540
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600
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720
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780
tgcataaatg gagcatctac tgttgtcacg gctatattcg gaggcattct ccaaatgag
840
gttaactgcc tcatatgttg gacagaatct agaaagtttg atccattcct agacctttca
900
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960
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1020
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1080
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1140
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1200
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1380
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1560
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1620
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1680
gtagttgtaa gaacttagtc ttatttgact tttttatttt atgttaatgt tttcagttct
1740
cactttgagg cacatttaca tcaatgcttt tgttcctctc acatgctgaa agcaagatgt
1800

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 1860
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 1920
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 1980
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 2040
 aatttggttg ttcagttgta cttgtcctgc aaatacaaga attactctct ttgttggttt
 2100
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 2217

<210> 4046

<211> 437

<212> PRT

<213> Homo sapiens

<400> 4046

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Lys | Leu | Arg | Ile | Leu | Lys | Leu | Arg | Lys | Ser | Tyr | Arg | Cys | Asp | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Val | Val | Asn | Asp | Thr | Lys | Leu | Gly | Leu | Val | Gln | Lys | Val | Arg | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| His | Leu | Gln | Asn | Leu | Glu | Asn | Ser | Ala | Phe | Thr | Ala | Asp | Arg | His | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Arg | Lys | Leu | Leu | Glu | Asn | Ser | Thr | Leu | Asn | Ser | Lys | Leu | Leu | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Val | Asn | Gly | Ser | Thr | Thr | Ala | Ile | Cys | Ala | Thr | Gly | Leu | Arg | Asn | Leu |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Gly | Asn | Thr | Cys | Phe | Met | Asn | Ala | Ile | Leu | Gln | Ser | Leu | Ser | Asn | Ile |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Glu | Gln | Phe | Cys | Cys | Tyr | Phe | Lys | Glu | Leu | Pro | Ala | Val | Glu | Leu | Arg |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asn | Gly | Lys | Thr | Ala | Gly | Arg | Arg | Thr | Tyr | His | Thr | Arg | Ser | Gln | Gly |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Asp | Asn | Asn | Val | Ser | Leu | Val | Glu | Glu | Phe | Arg | Lys | Thr | Leu | Cys | Ala |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Leu | Trp | Gln | Gly | Ser | Gln | Thr | Ala | Phe | Ser | Pro | Glu | Ser | Leu | Phe | Tyr |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Val | Val | Trp | Lys | Ile | Met | Pro | Asn | Phe | Arg | Gly | Tyr | Gln | Gln | Gln | Asp |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Ala | His | Glu | Phe | Xaa | Ala | Leu | Pro | Phe | Gly | Pro | Pro | Thr | Leu | Gly | Xaa |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Phe | Arg | Ala | Val | Ser | Thr | Val | Phe | Pro | Ala | Gln | Gln | Phe | Cys | Arg | Arg |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Ile | Leu | Leu | Cys | Leu | Gln | Val | Xaa | Lys | Cys | Cys | Ile | Asn | Gly | Ala | Ser |
| | 210 | | | | | 215 | | | | | | 220 | | | |
| Thr | Val | Val | Thr | Ala | Ile | Phe | Gly | Gly | Ile | Leu | Gln | Asn | Glu | Val | Asn |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Cys | Leu | Ile | Cys | Gly | Thr | Glu | Ser | Arg | Lys | Phe | Asp | Pro | Phe | Leu | Asp |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Leu | Ser | Leu | Asp | Ile | Pro | Ser | Gln | Phe | Arg | Ser | Lys | Arg | Ser | Lys | Asn |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 260 | | 265 | | 270 | | | | | | | | | | |
| Gln | Glu | Asn | Gly | Pro | Val | Cys | Ser | Leu | Arg | Asp | Cys | Leu | Arg | Ser | Phe |
| | 275 | | 280 | | 285 | | | | | | | | | | |
| Thr | Asp | Leu | Glu | Glu | Leu | Asp | Glu | Thr | Glu | Leu | Tyr | Met | Cys | His | Lys |
| | 290 | | 295 | | 300 | | | | | | | | | | |
| Cys | Lys | Xaa | Lys | Gln | Lys | Ser | Thr | Lys | Lys | Phe | Trp | Ile | Gln | Lys | Leu |
| 305 | | | 310 | | 315 | | | | | | | | | | 320 |
| Pro | Lys | Val | Leu | Cys | Leu | His | Leu | Lys | Arg | Phe | His | Trp | Thr | Ala | Tyr |
| | | | 325 | | 330 | | | | | | | | | | 335 |
| Leu | Arg | Asn | Lys | Val | Asp | Thr | Tyr | Val | Glu | Phe | Pro | Leu | Arg | Gly | Leu |
| | | | 340 | | 345 | | | | | | | | | | 350 |
| Asp | Met | Lys | Cys | Tyr | Leu | Leu | Asp | Pro | Glu | Asn | Ser | Gly | Pro | Glu | Ser |
| | 355 | | 360 | | 365 | | | | | | | | | | |
| Cys | Leu | Tyr | Asp | Leu | Ala | Ala | Val | Val | Val | His | His | Gly | Ser | Gly | Val |
| | 370 | | 375 | | 380 | | | | | | | | | | |
| Gly | Ser | Gly | His | Tyr | Thr | Ala | Tyr | Ala | Thr | His | Glu | Gly | Arg | Trp | Phe |
| 385 | | | 390 | | 395 | | | | | | | | | | 400 |
| His | Phe | Asn | Asp | Ser | Thr | Val | Thr | Leu | Thr | Asp | Glu | Glu | Thr | Val | Val |
| | | | 405 | | 410 | | | | | | | | | | 415 |
| Lys | Ala | Lys | Ala | Asn | Ile | Leu | Phe | Tyr | Val | Glu | His | Gln | Ala | Lys | Ala |
| | | | 420 | | 425 | | | | | | | | | | 430 |
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<210> 4047

<211> 809

<212> DNA

<213> Homo sapiens

<400> 4047

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 50 55 60
 Ile Phe Val Gln Asn Cys Pro Asp Thr Ala Lys Lys Leu Glu Lys Asn
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 Phe Ser Cys Asn Val Asn Thr Asp Ile Lys Asp Ala Val Val Val Pro
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<211> 403

<212> PRT

<213> Homo sapiens

<400> 4050

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| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Glu | Cys | Val | Tyr | Leu | Tyr | Gln | Pro | Asp | Glu | Arg | Gly | Pro | Cys | Phe | Ala |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Phe | Glu | Gly | His | Lys | Leu | Ile | Ala | His | Trp | Phe | Arg | Gly | Tyr | Leu | Ile |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ile | Val | Ser | Arg | Asp | Arg | Lys | Val | Ser | Pro | Lys | Ser | Glu | Phe | Thr | Ser |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Arg | Asp | Ser | Gln | Ser | Ser | Asp | Lys | Gln | Ile | Leu | Asn | Ile | Tyr | Asp | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Cys | Asn | Lys | Phe | Ile | Ala | Tyr | Ser | Thr | Val | Phe | Glu | Asp | Val | Val | Asp |
| | | | 85 | | | | | | 90 | | | | 95 | | |
| Val | Leu | Ala | Glu | Trp | Gly | Ser | Leu | Tyr | Val | Leu | Thr | Arg | Asp | Gly | Arg |
| | | 100 | | | | | | | 105 | | | | 110 | | |
| Val | His | Ala | Leu | Gln | Glu | Lys | Asp | Thr | Gln | Thr | Lys | Leu | Glu | Met | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Phe | Lys | Lys | Asn | Leu | Phe | Glu | Met | Ala | Ile | Asn | Leu | Ala | Lys | Ser | Gln |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| His | Leu | Asp | Ser | Asp | Gly | Leu | Ala | Gln | Ile | Phe | Met | Gln | Tyr | Gly | Asp |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| His | Leu | Tyr | Ser | Lys | Gly | Asn | His | Asp | Gly | Ala | Val | Gln | Gln | Tyr | Ile |
| | | | 165 | | | | | | 170 | | | | 175 | | |
| Arg | Thr | Ile | Gly | Lys | Leu | Glu | Pro | Ser | Tyr | Val | Ile | Arg | Lys | Phe | Leu |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Asp | Ala | Gln | Arg | Ile | His | Asn | Leu | Thr | Ala | Tyr | Leu | Gln | Thr | Leu | His |

| | | |
|---|-----|-----|
| 195 | 200 | 205 |
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| 210 | 215 | 220 |
| Tyr Thr Lys Leu Lys Asp Ser Ser Lys Leu Glu Glu Phe Ile Lys Lys | | |
| 225 | 230 | 235 |
| Lys Ser Glu Ser Glu Val His Phe Asp Val Glu Thr Ala Ile Lys Val | | |
| 245 | 250 | 255 |
| Leu Arg Gln Ala Gly Tyr Tyr Ser His Ala Leu Tyr Leu Ala Glu Asn | | |
| 260 | 265 | 270 |
| His Ala His His Glu Trp Tyr Leu Lys Ile Gln Leu Glu Asp Ile Lys | | |
| 275 | 280 | 285 |
| Asn Tyr Gln Glu Ala Leu Arg Tyr Ile Gly Lys Leu Pro Phe Glu Gln | | |
| 290 | 295 | 300 |
| Ala Glu Ser Asn Met Lys Arg Tyr Gly Lys Ile Leu Met His His Ile | | |
| 305 | 310 | 315 |
| Pro Glu Gln Thr Thr Gln Leu Leu Lys Gly Leu Cys Thr Asp Tyr Arg | | |
| 325 | 330 | 335 |
| Pro Ser Leu Glu Gly Arg Ser Asp Arg Glu Ala Pro Gly Cys Arg Ala | | |
| 340 | 345 | 350 |
| Asn Ser Glu Glu Phe Ile Pro Ile Phe Ala Asn Asn Pro Arg Glu Leu | | |
| 355 | 360 | 365 |
| Lys Ala Phe Leu Glu His Met Ser Glu Val Gln Pro Asp Ser Pro Gln | | |
| 370 | 375 | 380 |
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<212> DNA

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<400> 4051

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180

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240

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360

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420

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540

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600

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<211> 93

<212> PRT

<213> Homo sapiens

<400> 4052

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| 1 | | | 5 | | | | | 10 | | | | | | 15 | |
| Gly | Gly | Asn | Ala | Trp | Gly | Gly | Ala | Cys | Leu | Pro | Ala | Pro | Tyr | Gly | Gly |
| | | 20 | | | | | 25 | | | | | | 30 | | |
| Ala | Glu | Gly | Val | Arg | Pro | Pro | Pro | Gly | Pro | Ala | Pro | Leu | Pro | Pro | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Pro | Thr | Lys | Pro | Leu | Pro | Pro | Ala | Pro | Pro | Ser | Met | Gly | Ser | Asp | Ser |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ser | Gly | Glu | Arg | Ser | Pro | Ser | Pro | Pro | Trp | Pro | Pro | Pro | Pro | Pro | Pro |
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85

90

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 Glu Gly Arg Gly Gly Ser Arg His Ser Cys Pro Arg Arg Val Gly Arg
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 Gly Ser Pro Val Val Thr His Asp Leu Leu Arg Ser Glu Leu Pro Asp
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 Cys Ile Arg Ser Lys Asp Thr Asp Ala Leu Ile Asp Ala Ile Asp Thr
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 Tyr Ala Ala Cys Phe Gly Arg Pro Gln Val Ala Lys Thr Leu Leu Arg
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 His Gly Ala Asn Pro Asp Leu Arg Asp Glu Asp Gly Lys Thr Pro Leu
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| Asp Pro Glu Met Ala Pro Ile Tyr Leu Lys Arg Leu Leu Pro Val Phe | | | | | | |
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| Leu Ala Leu Ile Arg Lys Met Ile His Phe Cys Ser Glu Ala Leu Leu | | | | | | |
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| Lys Glu Val Cys Asp Ser Asp Val Gly His Asn Leu Pro Thr Ile Leu | | | | | | |
| | 385 | | 390 | | | 395 |
| Val Glu Ile Thr Ala Thr Val Leu Asp Gln Glu Asp Asp Asp Asp Gly | | | | | | |
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| His Leu Leu Ala Leu Gln Ile Ile Arg Asp Leu Val Asp Lys Gly Gly | | | | | | |
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| Lys Pro Glu Lys Glu Asp Glu Pro Gln Glu Asp Ala Lys Glu Leu Gln | | | | | | |
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| Gln Gly Lys Pro Tyr His Trp Arg Asp Trp Ser Ile Ile Arg Gly Arg | | | | | | |
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| Asp Cys Leu Tyr Ile Trp Ser Asp Ala Ala Ala Leu Glu Leu Ser Asn | | | | | | |
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| Ala Ile His Asn Ser Asp Gly Gln Gln Ala Thr Ile Leu Lys Glu Asp | | | | | | |
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| Leu Pro Gly Phe Val Phe Glu Ser Asn Arg Gly Thr Lys His Ser Phe | | | | | | |
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| Thr Ala Glu Thr Ser Leu Gly Ser Glu Phe Val Thr Gly Trp Thr Gly | | | | | | |
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| Val Arg Thr Met Ala Arg Asp Leu Tyr Asp Asp His Phe Lys Ala Val | | | | | | |
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| | 675 | | 680 | | | 685 |
| Gln Leu Glu Ser Ser Trp Glu Leu His Thr Asn Arg Gln Cys Ile Glu | | | | | | |
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| Ile Val Leu Leu Lys Asp Glu Asn Thr Ile Ser Pro Tyr Glu Met Cys | | | | | | |
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3239

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| Pro Ile Val Val Leu Ser Ser Ala Glu Asn Val Pro Gln Thr Glu Val | | 1245 |
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| Pro Gly Glu Ser Ser Ala Ile Ser Met Gly Ile Val Ser Val Ser Ser | | 1295 |
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| Pro Asp Val Ser Ser Val Ser Glu Leu Thr Asn Lys Glu Ala Ala Ser | | 1310 |
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 2005 2010 2015
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| Phe | Ser | Asn | Ile | Ser | Ser | Ile | Tyr | Gln | Phe | His | Ser | Gln | Phe | Phe | Leu |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Pro | Glu | Leu | Gln | Arg | Arg | Leu | Asp | Asp | Trp | Thr | Ala | Asn | Pro | Arg | Ile |
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| Gly | Asp | Val | Ile | Gln | Lys | Leu | Ala | Pro | Phe | Leu | Lys | Met | Tyr | Ser | Glu |
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| Tyr | Val | Lys | Asn | Phe | Glu | Arg | Ala | Ala | Glu | Leu | Leu | Ala | Thr | Trp | Thr |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Lys | Ser | Pro | Leu | Phe | Gln | Glu | Val | Leu | Thr | Arg | Ile | Gln | Val | Arg |
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| Leu | Gly | Glu | Gly | Trp | Ser | Gln | His | Cys | His | Ser | Gln | His | Ala | Val | Ala |
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960

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<210> 4068

<211> 521

<212> PRT

<213> Homo sapiens

<400> 4068

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Lys | Arg | Asp | Arg | Pro | Pro | Cys | Ser | Pro | Ser | Arg | Val | Leu | His | Leu |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Arg | Lys | Ile | Pro | Cys | Asp | Val | Thr | Glu | Ala | Glu | Ile | Ile | Ser | Leu | Gly |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Leu | Pro | Phe | Gly | Lys | Val | Thr | Asn | Leu | Leu | Met | Leu | Lys | Gly | Lys | Ser |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Gln | Ala | Phe | Leu | Glu | Met | Ala | Ser | Glu | Glu | Ala | Ala | Val | Thr | Met | Val |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Asn | Tyr | Tyr | Thr | Pro | Ile | Thr | Pro | His | Leu | Arg | Ser | Gln | Pro | Val | Tyr |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Ile | Gln | Tyr | Ser | Asn | His | Arg | Glu | Leu | Lys | Thr | Asp | Asn | Leu | Pro | Asn |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Gln | Ala | Arg | Ala | Gln | Ala | Ala | Leu | Gln | Ala | Val | Ser | Ala | Val | Gln | Ser |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Gly | Ser | Leu | Ala | Leu | Ser | Gly | Gly | Pro | Ser | Asn | Glu | Gly | Thr | Val | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Pro | Gly | Gln | Ser | Pro | Val | Leu | Arg | Ile | Ile | Ile | Glu | Asn | Leu | Phe | Tyr |

145 150 155 160
 Pro Val Thr Leu Glu Val Leu His Gln Ile Phe Ser Lys Phe Gly Thr
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 Val Leu Lys Ile Ile Thr Phe Thr Lys Asn Asn Gln Phe Gln Ala Leu
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 Leu Gln Tyr Ala Asp Pro Val Asn Ala His Tyr Ala Lys Met Ala Leu
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 210 215 220
 Ser Lys Leu Thr Ser Leu Asn Val Lys Tyr Asn Asn Asp Lys Ser Arg
 225 230 235 240
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 Glu Pro Pro Met Ala Ala Ala Phe Gly Ala Pro Gly Ile Ile Ser Ser
 260 265 270
 Pro Tyr Ala Gly Ala Ala Gly Phe Ala Pro Ala Ile Gly Phe Pro Gln
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 Asp Leu Ile Thr Pro His Gly Leu Phe Ile Leu Phe Gly Val Tyr Gly
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 Asp Val His Arg Val Lys Ile Met Phe Asn Lys Lys Glu Asn Ala Leu
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 His Gln Ala Val Gln Leu Pro Arg Glu Gly Gln Glu Asp Gln Gly Leu
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 420 425 430
 Ser Lys Asn Phe Gln Asn Ile Phe Pro Pro Ser Ala Thr Leu His Leu
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 465 470 475 480
 Arg Lys Met Ala Leu Ile Gln Leu Gly Ser Val Glu Glu Ala Ile Gln
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<211> 714

<212> DNA

<213> Homo sapiens

<400> 4069

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 180
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 600
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<211> 113

<212> PRT

<213> Homo sapiens

<400> 4070

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| Met | Ser | Tyr | Pro | Ala | Lys | Val | Thr | Leu | Leu | Gly | Ser | Val | Ile | Phe | Thr |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Phe | Gln | His | Thr | Gln | His | Leu | Ala | Ile | Ser | Lys | His | Asn | Leu | Met | Phe |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Tyr | Thr | Ile | Phe | Ile | Val | Ala | Thr | Lys | Ile | Thr | Met | Met | Thr | Thr |
| | | | 35 | | | | | 40 | | | | | 45 | | |
| Gln | Thr | Ser | Thr | Met | Thr | Phe | Ala | Pro | Phe | Glu | Asp | Thr | Leu | Ser | Trp |
| | | | 50 | | | | | 55 | | | | 60 | | | |
| Met | Leu | Phe | Gly | Trp | Gln | Gln | Pro | Phe | Ser | Ser | Cys | Glu | Lys | Lys | Ser |
| | | | | | | | 70 | | | | 75 | | | | 80 |
| Glu | Ala | Lys | Ser | Pro | Ser | Asn | Gly | Val | Gly | Ser | Leu | Ala | Ser | Lys | Pro |
| | | | | | | | 85 | | | | 90 | | | | 95 |
| Val | Asp | Val | Ala | Ser | Asp | Asn | Val | Lys | Lys | Lys | His | Thr | Lys | Lys | Asn |
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<210> 4071

<211> 601

<212> DNA

<213> Homo sapiens

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<210> 4072

<211> 175

<212> PRT

<213> Homo sapiens

<400> 4072

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| Cys | Ala | Leu | Val | Pro | Arg | Leu | Val | Arg | Met | Lys | Val | Phe | His | Leu | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Ser | Gln | Ser | Val | Val | Leu | Arg | His | His | Trp | Ile | Leu | Pro | Phe | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gln | Ala | Leu | Lys | Ala | Arg | Met | Thr | Ser | Phe | His | Arg | Phe | Phe | Phe | Thr |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Asn | Gln | Val | Lys | Ile | Tyr | Thr | Asn | Gln | Glu | Lys | Thr | Arg | Thr | Phe |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ile | Gly | Leu | Glu | Val | Thr | Ser | Gly | His | Ala | Gln | Phe | Leu | Asp | Leu | Val |
| | | | 85 | | | | | | 90 | | | | 95 | | |
| Ser | Glu | Val | Asp | Arg | Val | Met | Glu | Glu | Phe | Asn | Leu | Thr | Thr | Phe | Tyr |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Gln | Asp | Pro | Ser | Phe | His | Leu | Ser | Leu | Ala | Trp | Cys | Val | Gly | Asp | Ala |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Arg | Leu | Gln | Leu | Glu | Gly | Gln | Cys | Leu | Gln | Glu | Leu | Gln | Ala | Ile | Val |
| | 130 | | | | | 135 | | | | | | 140 | | | |
| Asp | Gly | Phe | Glu | Asp | Ala | Glu | Val | Leu | Leu | Arg | Val | His | Thr | Glu | Gln |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Val | Arg | Cys | Lys | Ser | Gly | Asn | Lys | Phe | Phe | Ser | Met | Pro | Leu | Lys | |
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<210> 4073

<211> 1864

<212> DNA

<213> Homo sapiens

<400> 4073

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420
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<211> 456

<212> PRT

<213> Homo sapiens

<400> 4074

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asp | Gln | Ser | Asn | Ala | Glu | Lys | His | Ala | Asp | Gly | Met | Ile | Ser | Thr | Ile |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Asn | Pro | Val | Asp | Ala | Ile | Tyr | Gln | Pro | Ser | Pro | Leu | Glu | Pro | Val | Ile |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Ser | Thr | Met | Pro | Ser | Gln | Thr | Val | Leu | Pro | Pro | Glu | Pro | Val | Gln | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Cys | Lys | Ser | Glu | Gln | Arg | Pro | Ser | Ser | Leu | Pro | Val | Gly | Pro | Val | Leu |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Ala | Thr | Leu | Gly | His | His | Gln | Thr | Pro | Thr | Pro | Asn | Ser | Thr | Gly | Ser |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| Gly | His | Ser | Pro | Pro | Ser | Ser | Ser | Leu | Thr | Ser | Pro | Ser | His | Val | Asn |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Ser | Pro | Asn | Thr | Val | Pro | Glu | Phe | Ser | Tyr | Ser | Ser | Ser | Glu | Asp |
| | | | 115 | | | | 120 | | | | | | 125 | | |
| Glu | Phe | Tyr | Asp | Ala | Asp | Glu | Phe | His | Gln | Ser | Gly | Ser | Ser | Pro | Lys |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Arg | Leu | Ile | Asp | Ser | Ser | Gly | Ser | Ala | Ser | Val | Leu | Thr | His | Ser | Ser |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ser | Gly | Asn | Ser | Leu | Lys | Arg | Pro | Asp | Thr | Thr | Glu | Ser | Leu | Asn | Ser |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Ser | Leu | Ser | Asn | Gly | Thr | Ser | Asp | Ala | Asp | Leu | Phe | Asp | Ser | His | Asp |
| | | | 180 | | | | | 185 | | | | | | 190 | |
| Asp | Arg | Asp | Asp | Ala | Glu | Ala | Gly | Ser | Val | Glu | Glu | His | Lys | Ser | |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Val | Ile | Met | His | Leu | Leu | Ser | Gln | Val | Arg | Leu | Gly | Met | Asp | Leu | Thr |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Lys | Val | Val | Leu | Pro | Thr | Phe | Ile | Leu | Glu | Arg | Arg | Ser | Leu | Leu | Glu |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Met | Tyr | Ala | Asp | Phe | Phe | Ala | His | Pro | Asp | Leu | Phe | Val | Ser | Ile | Ser |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Asp | Gln | Lys | Asp | Pro | Lys | Asp | Arg | Met | Val | Gln | Val | Val | Lys | Trp | Tyr |

260 265 270
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 Tyr Asn Pro Ile Leu Gly Glu Ile Phe Gln Cys His Trp Thr Leu Pro
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 Asn Asp Thr Glu Glu Asn Thr Glu Leu Val Ser Glu Gly Pro Val Pro
 305 310 315 320
 Trp Val Ser Lys Asn Ser Val Thr Phe Val Ala Glu Gln Val Ser His
 325 330 335
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 Gln Phe Asn Ala His Ile Trp Thr Lys Ser Lys Phe Leu Gly Met Ser
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 Ile Gly Val His Asn Ile Gly Gln Gly Cys Val Ser Cys Leu Asp Tyr
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 Asp Glu His Tyr Ile Leu Thr Phe Pro Asn Gly Tyr Gly Arg Ser Ile
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<211> 2492

<212> DNA

<213> Homo sapiens

<400> 4075

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<212> PRT

<213> Homo sapiens

<400> 4076

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| Thr | Phe | Arg | Arg | Pro | Gln | Ile | Asp | Pro | Ala | Val | Glu | Gly | Phe | Ile | Arg |
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| Lys | Lys | Gln | Leu | Ser | Lys | Asp | Ser | Ile | Leu | Ser | Leu | Tyr | Gly | Ser | Gln |
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| Thr | Pro | Gln | Met | Pro | Thr | Gln | Ala | Met | Phe | Met | Ala | Pro | Ala | Gln | Met |
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| Ser | Ile | Met | Gly | Ser | Met | Met | Pro | Pro | Pro | Val | Gly | Met | Val | Ala | Gln |
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 35 40 45
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 Arg Ala Gln Pro Ser Pro Glu Arg Thr Leu His Ser Asn Leu Pro Gln
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 Phe Ala Gly Val Thr Thr His Gln Glu Leu Phe Pro His Ser Leu Leu
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 Tyr Thr Gly Tyr Asp Met Glu Asp Ala Met Ile Val Asn Lys Ala Ser
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<211> 362

<212> PRT

<213> Homo sapiens

<400> 4084

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 Pro Ser Ser Gln Arg Gln Val Gln Asn Gly Pro Ser Pro Asp Glu Met
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 Asp Ile Gln Arg Arg Gln Val Met Glu Gln His Gln Gln Gln Arg Gln
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 Glu Ser Leu Glu Arg Arg Thr Ser Ala Thr Gly Pro Ile Leu Pro Pro

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 Gly His Pro Ser Ser Ala Ala Ser Ala Pro Val Ser Cys Ser Gly Pro
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 145 150 155 160
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 Pro Ser Gly Thr Ser Lys Ser Asp Ala Asn Arg Ala Ser Ser Gly Gly
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 Glu Arg Ser Asn Ser Val Glu Lys Pro Val Ser Ser Ile Leu Ser Arg
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<211> 2673

<212> DNA

<213> Homo sapiens

<400> 4085

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<213> Homo sapiens

<400> 4086

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| Val | Lys | Arg | Val | Thr | Ala | Asn | Asn | Leu | Glu | Thr | Phe | Ile | Phe | Ile | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Leu | Leu | Val | Phe | Ala | Ile | Ala | Ala | Ala | Tyr | Val | Trp | Ile | Glu | |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Gly | Thr | Lys | Asp | Pro | Ser | Arg | Asn | Arg | Tyr | Lys | Leu | Phe | Leu | Glu | Cys |
| | | | 50 | | | | 55 | | | | 60 | | | | |
| Thr | Leu | Ile | Leu | Thr | Ser | Val | Val | Pro | Pro | Glu | Leu | Pro | Ile | Glu | Leu |
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| Ser | Leu | Ala | Val | Asn | Thr | Ser | Leu | Ile | Ala | Leu | Ala | Lys | Leu | Tyr | Met |
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| Tyr | Cys | Thr | Glu | Pro | Phe | Arg | Ile | Pro | Phe | Ala | Gly | Lys | Val | Glu | Val |
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| Cys | Cys | Phe | Asp | Lys | Thr | Gly | Thr | Leu | Thr | Ser | Asp | Ser | Leu | Val | Val |
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| Arg | Gly | Val | Ala | Gly | Leu | Arg | Asp | Gly | Lys | Glu | Val | Thr | Pro | Val | Ser |
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| Ser | Ile | Pro | Val | Glu | Thr | His | Arg | Ala | Leu | Ala | Ser | Cys | His | Ser | Leu |
| 145 | | | | | 150 | | | | 155 | | | | | 160 | |
| Met | Gln | Leu | Asp | Asp | Gly | Thr | Leu | Val | Gly | Asp | Pro | Leu | Glu | Lys | Ala |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Met | Leu | Thr | Ala | Val | Asp | Trp | Thr | Leu | Thr | Lys | Asp | Glu | Lys | Val | Phe |
| | | | 180 | | | | | 185 | | | | 190 | | | |
| Pro | Arg | Ser | Ile | Lys | Thr | Gln | Gly | Leu | Lys | Ile | His | Gln | Arg | Phe | His |

| | | |
|---|-----|-----|
| 195 | 200 | 205 |
| Phe Ala Ser Ala Leu Lys Arg Met Ser Val Leu Ala Ser Tyr Glu Lys | | |
| 210 | 215 | 220 |
| Leu Gly Ser Thr Asp Leu Cys Tyr Ile Ala Ala Val Lys Gly Ala Pro | | |
| 225 | 230 | 235 |
| Glu Thr Leu His Ser Met Phe Ser Gln Cys Pro Pro Asp Tyr His His | | |
| 245 | 250 | 255 |
| Ile His Thr Glu Ile Ser Arg Glu Gly Ala Arg Val Leu Ala Leu Gly | | |
| 260 | 265 | 270 |
| Tyr Lys Glu Leu Gly His Leu Thr His Gln Gln Ala Arg Glu Val Lys | | |
| 275 | 280 | 285 |
| Arg Glu Ala Leu Glu Cys Ser Leu Lys Phe Val Gly Phe Ile Val Val | | |
| 290 | 295 | 300 |
| Ser Cys Pro Leu Lys Ala Asp Ser Lys Ala Val Ile Arg Glu Ile Gln | | |
| 305 | 310 | 315 |
| Asn Ala Ser His Arg Val Val Met Ile Thr Gly Asp Asn Pro Leu Thr | | |
| 325 | 330 | 335 |
| Ala Cys His Val Ala Gln Glu Leu His Phe Ile Glu Lys Ala His Thr | | |
| 340 | 345 | 350 |
| Leu Ile Leu Gln Pro Pro Ser Glu Lys Gly Arg Gln Cys Glu Trp Arg | | |
| 355 | 360 | 365 |
| Ser Ile Asp Gly Ser Ile Val Leu Pro Leu Xaa Pro Gly Ala Pro Gln | | |
| 370 | 375 | 380 |
| Arg His Trp Pro Trp Ser Thr His Xaa Cys Leu Thr Gly Asp Gly Leu | | |
| 385 | 390 | 395 |
| Ala His Leu Gln Ala Thr Asp Pro Gln Gln Leu Leu Arg Leu Ile Pro | | |
| 405 | 410 | 415 |
| His Val Gln Val Phe Ala Arg Val Ala Pro Lys Gln Lys Glu Phe Val | | |
| 420 | 425 | 430 |
| Ile Thr Ser Leu Lys Glu Leu Gly Tyr Val Thr Leu Met Cys Gly Asp | | |
| 435 | 440 | 445 |
| Gly Thr Asn Asp Val Gly Ala Leu Lys His Ala Asp Val Gly Val Ala | | |
| 450 | 455 | 460 |
| Leu Leu Ala Asn Ala Pro Glu Arg Val Val Glu Arg Arg Arg Arg Pro | | |
| 465 | 470 | 475 |
| Arg Asp Ser Pro Thr Leu Ser Asn Ser Gly Ile Arg Ala Thr Ser Arg | | |
| 485 | 490 | 495 |
| Thr Ala Lys Gln Arg Ser Gly Leu Pro Pro Ser Glu Glu Gln Pro Thr | | |
| 500 | 505 | 510 |
| Ser Gln Arg Asp Arg Leu Ser Gln Val Leu Arg Asp Leu Glu Asp Glu | | |
| 515 | 520 | 525 |
| Ser Thr Pro Ile Val Lys Leu Gly Asp Ala Ser Ile Ala Ala Pro Phe | | |
| 530 | 535 | 540 |
| Thr Ser Lys Leu Ser Ser Ile Gln Cys Ile Cys His Val Ile Lys Gln | | |
| 545 | 550 | 555 |
| Gly Arg Cys Thr Leu Val Thr Thr Leu Gln Met Phe Lys Ile Leu Ala | | |
| 565 | 570 | 575 |
| Leu Asn Ala Leu Ile Leu Ala Tyr Ser Gln Ser Val Leu Tyr Leu Glu | | |
| 580 | 585 | 590 |
| Gly Val Lys Phe Ser Asp Phe Gln Ala Thr Leu Gln Gly Leu Leu Leu | | |
| 595 | 600 | 605 |
| Ala Gly Cys Phe Leu Phe Ile Ser Arg Ser Lys Pro Leu Lys Thr Leu | | |
| 610 | 615 | 620 |
| Ser Arg Glu Arg Pro Leu Pro Asn Ile Phe Asn Leu Tyr Thr Ile Leu | | |

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<210> 4087
<211> 959
<212> DNA
<213> Homo sapiens
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<400> 4087
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120
ggcccagagt gccaaaaaca aggggatttg gtgatggagg ctttgttaga aggaatacaa
180
aatcgagggc atggtggggg atttttgaca tcttgcaag cagaactaca ggagctcatg
240
aaacagattg acataatggt ggctcataaa aaatctgaat gggaaggacg tacacatgct
300
ctagaaactt gcttgaaaat ccgtgaacag gaacttaaga gtcttaggag tcagttggat
360
gtgacacata aggaggttgg aatgttgcac cagcaggtag aagaacatga aaaaatcaag
420
caagagatga ccatggaata taagcaggag ttgaagaaac tacatgaaga attatgcata
480
ctgaagagaa gctatgaaaa gcttcagaaa aagcaaatga gggaattcag aggaaatacc
540
aaaaatcaca gggaagatcg gtctgaaatt gagagggttaa ctgcaaaaat agaggaattc
600
cgtcagaaat cgctggactg ggagaagcaa cgcttgattt atcagcaaca ggtatcttca
660
ctggaggcac aaaggaaggc tctggctgaa caatcagaga taattcaggc tcagcttgct
720
aatcggaaac agaaattaga gtctgtggaa ctttctagcc aatcagaaat tcaacactta
780

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agcagtaaac tggagcgggc taatgacact atctgtgcc aatagagcgc
 840
 ctcacatga gggatcaatga cttggttga accagtatga ctgtcctaca ggagcagcag
 900
 caaaaagaag aaaaattgag ggaatctgaa aaactattag aggtcttgca ggaaaaaaa
 959

<210> 4088

<211> 319

<212> PRT

<213> Homo sapiens

<400> 4088

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Ser | Leu | Glu | Lys | Ala | Leu | Phe | Gln | Leu | Leu | Lys | Val | Trp | Gly | 1 | 5 | 10 | 15 |
| Gln | Trp | Ala | Glu | Gln | Thr | Arg | Arg | Leu | Gln | Arg | Leu | Asp | Val | Ser | Leu | 20 | 25 | 30 | |
| Ala | Val | Ala | Arg | Val | Arg | Ser | Ala | Gly | Pro | Ser | Cys | Gln | Asn | Lys | Gly | 35 | 40 | 45 | |
| Asp | Leu | Val | Met | Glu | Ala | Leu | Leu | Glu | Gly | Ile | Gln | Asn | Arg | Gly | His | 50 | 55 | 60 | |
| Gly | Gly | Gly | Phe | Leu | Thr | Ser | Cys | Glu | Ala | Glu | Leu | Gln | Glu | Leu | Met | 65 | 70 | 75 | 80 |
| Lys | Gln | Ile | Asp | Ile | Met | Val | Ala | His | Lys | Lys | Ser | Glu | Trp | Glu | Gly | 85 | 90 | 95 | |
| Arg | Thr | His | Ala | Leu | Glu | Thr | Cys | Leu | Lys | Ile | Arg | Glu | Gln | Glu | Leu | 100 | 105 | 110 | |
| Lys | Ser | Leu | Arg | Ser | Gln | Leu | Asp | Val | Thr | His | Lys | Glu | Val | Gly | Met | 115 | 120 | 125 | |
| Leu | His | Gln | Gln | Val | Glu | Glu | His | Glu | Lys | Ile | Lys | Gln | Glu | Met | Thr | 130 | 135 | 140 | |
| Met | Glu | Tyr | Lys | Gln | Glu | Leu | Lys | Lys | Leu | His | Glu | Glu | Leu | Cys | Ile | 145 | 150 | 155 | 160 |
| Leu | Lys | Arg | Ser | Tyr | Glu | Lys | Leu | Gln | Lys | Lys | Gln | Met | Arg | Glu | Phe | 165 | 170 | 175 | |
| Arg | Gly | Asn | Thr | Lys | Asn | His | Arg | Glu | Asp | Arg | Ser | Glu | Ile | Glu | Arg | 180 | 185 | 190 | |
| Leu | Thr | Ala | Lys | Ile | Glu | Glu | Phe | Arg | Gln | Lys | Ser | Leu | Asp | Trp | Glu | 195 | 200 | 205 | |
| Lys | Gln | Arg | Leu | Ile | Tyr | Gln | Gln | Gln | Val | Ser | Ser | Leu | Glu | Ala | Gln | 210 | 215 | 220 | |
| Arg | Lys | Ala | Leu | Ala | Glu | Gln | Ser | Glu | Ile | Ile | Gln | Ala | Gln | Leu | Val | 225 | 230 | 235 | 240 |
| Asn | Arg | Lys | Gln | Lys | Leu | Glu | Ser | Val | Glu | Leu | Ser | Ser | Gln | Ser | Glu | 245 | 250 | 255 | |
| Ile | Gln | His | Leu | Ser | Ser | Lys | Leu | Glu | Arg | Ala | Asn | Asp | Thr | Ile | Cys | 260 | 265 | 270 | |
| Ala | Asn | Glu | Leu | Glu | Ile | Glu | Arg | Leu | Thr | Met | Arg | Val | Asn | Asp | Leu | 275 | 280 | 285 | |
| Val | Gly | Thr | Ser | Met | Thr | Val | Leu | Gln | Glu | Gln | Gln | Gln | Lys | Glu | Glu | 290 | 295 | 300 | |
| Lys | Leu | Arg | Glu | Ser | Glu | Lys | Leu | Leu | Glu | Ala | Leu | Gln | Glu | Lys | | 305 | 310 | 315 | |

<210> 4089
 <211> 511
 <212> DNA
 <213> Homo sapiens

<400> 4089
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 ctttgtcttg cgtctttatt tctatgttct cttgtctctg cacatgggga gaaacccacc
 120
 aaccctgtgg ggctggcccc tacacagttt ttaaggggta caggaaggga aagaaacagg
 180
 caccatgtgg ggcaggggtt ctgcttctat catatttcca tttgttggtt ttaggagatc
 240
 cttccaactc tctaacaat tattttccag agaacaaaag aaaaactatg ctctccaaga
 300
 acatgtttcc tttgtaattt ttctgtcttc aaactttttc tggagagatg agtcatttga
 360
 cctgacattg agaataggct tgaagccctt tgagaggaca aaggagatag agtcagcatt
 420
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 480
 tcactgttta tggaagatag agtacacctg t
 511

<210> 4090
 <211> 109
 <212> PRT
 <213> Homo sapiens

<400> 4090
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 20 25 30
 Lys Asn Tyr Ala Leu Gln Glu His Val Ser Phe Val Ile Phe Leu Ser
 35 40 45
 Ser Asn Phe Phe Trp Arg Asp Glu Ser Phe Asp Leu Thr Leu Arg Ile
 50 55 60
 Gly Leu Lys Pro Phe Glu Arg Thr Lys Glu Ile Glu Ser Ala Phe Leu
 65 70 75 80
 Ser Pro Cys Ser Glu Asp Pro Ser His Leu Val Thr Ala Pro Trp Ala
 85 90 95
 Val Tyr Phe His Cys Leu Trp Lys Ile Glu Tyr Thr Cys
 100 105

<210> 4091
 <211> 1526
 <212> DNA
 <213> Homo sapiens

<400> 4091
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gtgcccagcg gctccggacg tgctacgggg tgcgagcgcg ggggagttcg gggcgcacga
120
caaggaaggg cccccgggag ctctatatgg aggaaggagc ccagaatggg gtgcaccagg
180
aagacaaaaa ctttggtgtc cacttgctg atcctgagcg gcatgactaa catcatctgc
240
ctgctctacg tgggctgggt caccaactac atcgccagcg tgtatgtgcg ggggcaggag
300
ccggcgcccc acaagaagct ggaggaagac aaaggggaca ctctgaagat tattgagcgg
360
ctggaccacc tggagaatgt catcaagcag cacattcaag gctataggag aaatttctcc
420
cttctgaatg tgtccaacta actctgttca cctgagaaat catattcccc agctctgggt
480
atccctgaat aaccacagga gaacagttcc aggcctgat aagtcagcta ttgcaagggg
540
gacctggctg gaagatatga aggaaaaata tcattcttga actaataagt tgagagatca
600
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660
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720
agaatgggat gcgtcaagaa aaccgtgggt cccccagctc tgttcttgga ttcaagtgcct
780
gttggtttcat cctgtgtaga ctggagtcag ggtctacaca gttggaattc tatggaacca
840
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900
cttggtttcat gaacagctcc ctgtaggate tctgttgggg tgggggattc taggggcatc
960
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1020
tgcagtcccc tcccagggtt ggctagcagt attgttgggt accgtaagca cttagcattg
1080
ttaagtgagc ataagtaaca agatgcaaca gcctctggcc aagttttgaa gattttgttt
1140
taaagtatgc ttttagatgt tgacattcat gattattaaa aggaacaaaa ctcaatttgg
1200
ggtctcaaga gccacaattc tagacttcta ggatgtcagg agccatgctc ttaagcttct
1260
caccctgctg ttttaatgag attaatgatt attttccact gagcacctac ctgtgatgtt
1320
cataaaaaag tgaaataaat gactcacatg gagatttggg aggatattcac tgtggaaagt
1380
agatgttaac agcctctaga aatatgataa ttatcagcta tttgagatgc agtcactgta
1440
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1500
gttataagaa aaaaaaaaaa aaaaaa
1526

<210> 4092

<211> 146

<212> PRT

<213> Homo sapiens

<400> 4092

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 20 25 30
 Arg Gly Gly Val Arg Gly Ala Arg Gln Gly Arg Ala Pro Gly Ser Ser
 35 40 45
 Ile Trp Arg Lys Glu Pro Arg Met Val Cys Thr Arg Lys Thr Lys Thr
 50 55 60
 Leu Val Ser Thr Cys Val Ile Leu Ser Gly Met Thr Asn Ile Ile Cys
 65 70 75 80
 Leu Leu Tyr Val Gly Trp Val Thr Asn Tyr Ile Ala Ser Val Tyr Val
 85 90 95
 Arg Gly Gln Glu Pro Ala Pro Asp Lys Lys Leu Glu Glu Asp Lys Gly
 100 105 110
 Asp Thr Leu Lys Ile Ile Glu Arg Leu Asp His Leu Glu Asn Val Ile
 115 120 125
 Lys Gln His Ile Gln Gly Tyr Arg Arg Asn Phe Ser Leu Leu Asn Val
 130 135 140
 Ser Asn
 145

<210> 4093

<211> 1519

<212> DNA

<213> Homo sapiens

<400> 4093

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 120
 gaggaaaaga ggccggggcg cgctgggggg tgagagcatg agggaggccg gggggggctg
 180
 cttggagcgc tgctagggag cggcgccgcc gcacaccgcg ctgggcgcgg cggagggcgg
 240
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 300
 gcacctaggg gcccgagca gccccgccc cggcgccgcg ccgacatggg caacgcaggg
 360
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 420
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 480
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 540
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 600
 tatctggatc cagctgtaac caggaagaaa ttcagacggc gtgttcaaga atctacacaa
 660
 gtgctaagag aactggaaat ttctttaaga actaaccaca ttggatgggt cagagaattt
 720

ctgaatgaag aaaacaaagg tcttgatggt ctagtggaat atctctcatt tgcacagtac
 780
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 840
 aagccctgga gtaggtccat cgaggacctg cacagaggga gcaacctgcc ctcacctgtg
 900
 ggcaacagtg tctcccgtc tggaagacat tctgcactgc gatataatac attgccaagc
 960
 agaagaactc tgaaaaattc aagattagtg agtaagaaag atgatgtgca tgtctgtatc
 1020
 atgtgtttac gtgccatcat gaattatcag tatggtttca acatgggtcat gtctcatcca
 1080
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 1140
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 1200
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 1260
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 1320
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 1380
 aaattaggcc tggacgaata cttggacaag ctgaaacaca ctgagagtga caagcttcaa
 1440
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 1519

<210> 4094

<211> 391

<212> PRT

<213> Homo sapiens

<400> 4094

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Asn | Ala | Gly | Ser | Met | Asp | Ser | Gln | Gln | Thr | Asp | Phe | Arg | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | Asn | Val | Pro | Leu | Lys | Leu | Pro | Met | Pro | Glu | Pro | Gly | Glu | Leu | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Arg | Phe | Ala | Ile | Val | Leu | Asn | Ala | Met | Asn | Leu | Pro | Pro | Asp | Lys |
| | | 35 | | | | | | 40 | | | | 45 | | | |
| Ala | Arg | Leu | Leu | Arg | Gln | Tyr | Asp | Asn | Glu | Lys | Lys | Trp | Glu | Leu | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Cys | Asp | Gln | Glu | Arg | Phe | Gln | Val | Lys | Asn | Pro | Pro | His | Thr | Tyr | Ile |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gln | Lys | Leu | Lys | Gly | Tyr | Leu | Asp | Pro | Ala | Val | Thr | Arg | Lys | Lys | Phe |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Arg | Arg | Arg | Val | Gln | Glu | Ser | Thr | Gln | Val | Leu | Arg | Glu | Leu | Glu | Ile |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ser | Leu | Arg | Thr | Asn | His | Ile | Gly | Trp | Val | Arg | Glu | Phe | Leu | Asn | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Glu | Asn | Lys | Gly | Leu | Asp | Val | Leu | Val | Glu | Tyr | Leu | Ser | Phe | Ala | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Tyr | Ala | Val | Thr | Phe | Asp | Phe | Glu | Ser | Val | Glu | Ser | Thr | Val | Glu | Ser |

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145          150          155          160
Ser Val Asp Lys Ser Lys Pro Trp Ser Arg Ser Ile Glu Asp Leu His
          165          170          175
Arg Gly Ser Asn Leu Pro Ser Pro Val Gly Asn Ser Val Ser Arg Ser
          180          185          190
Gly Arg His Ser Ala Leu Arg Tyr Asn Thr Leu Pro Ser Arg Arg Thr
          195          200          205
Leu Lys Asn Ser Arg Leu Val Ser Lys Lys Asp Asp Val His Val Cys
          210          215          220
Ile Met Cys Leu Arg Ala Ile Met Asn Tyr Gln Tyr Gly Phe Asn Met
225          230          235          240
Val Met Ser His Pro His Ala Val Asn Glu Ile Ala Leu Ser Leu Asn
          245          250          255
Asn Lys Asn Pro Arg Thr Lys Ala Leu Val Leu Glu Leu Leu Ala Ala
          260          265          270
Val Cys Leu Val Arg Gly Gly His Glu Ile Ile Leu Ser Ala Phe Asp
          275          280          285
Asn Phe Lys Glu Val Cys Gly Glu Lys Gln Arg Phe Glu Lys Leu Met
          290          295          300
Glu His Phe Arg Asn Glu Asp Asn Asn Ile Asp Phe Met Val Ala Ser
305          310          315          320
Met Gln Phe Ile Asn Ile Val Val His Ser Val Glu Asp Met Asn Phe
          325          330          335
Arg Val His Leu Gln Tyr Glu Phe Thr Lys Leu Gly Leu Asp Glu Tyr
          340          345          350
Leu Asp Lys Leu Lys His Thr Glu Ser Asp Lys Leu Gln Val Gln Ile
          355          360          365
Gln Ala Tyr Leu Asp Asn Val Phe Asp Val Gly Ala Leu Leu Glu Asp
          370          375          380
Ala Glu Thr Lys Asn Ala Ala
385          390

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<210> 4095

<211> 253

<212> DNA

<213> Homo sapiens

<400> 4095

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120
agagagatca agtagcatcc ccagcgaaat ctgaggcctc tggaggcgcc tgtgcacgtg
180
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240
tctgtgcacg cgt
253

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<210> 4096

<211> 83

<212> PRT

<213> Homo sapiens

<400> 4096

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 20 25 30
 Gln Val Arg Lys Leu Arg Leu Lys Arg Asp Gln Val Ala Ser Pro Ala
 35 40 45
 Lys Ser Glu Ala Ser Gly Gly Ala Cys Ala Arg Val Ser Gly Ser Val
 50 55 60
 Cys Pro Gly Ser Ile Ser Ala Cys Val Cys Leu Ser Arg Gln His Ile
 65 70 75 80
 Cys Ala Arg

<210> 4097

<211> 1385

<212> DNA

<213> Homo sapiens

<400> 4097

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 120
 cgtgctgtcc tcaattgttc tacaatgagt gccaaatctg ctatcagcaa ggaaatTTTT
 180
 gcacctcttg atgaaaggat gctgggagct gtccaagtca agaggaggac aaagaaaaag
 240
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 300
 acaaacaaga aaccacaca ggcgtccatc acaaaggcca aacagtttga aggctccaca
 360
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 420
 cctaattggg attcggcaga gtttgatttg ttgtttgaaa atgcttttga ccagtgggta
 480
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 720
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 780
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 aagaattcgg gacctccgct tgcttctttt ttccaatat ttggacactt agagtgggtt
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 aatgatcttg ctaataaatg ctacaatagc atcagcttca ttttgggttt ttgcctcctc
 1020

ccactgtgtg tatgtgtgta tatgtatgtt ttgaatatgt tttctttatt aaaaaatatt
 1080
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 1140
 aacatgtatt tttttctctg atattaagca ggaaggcatt ttaatgtggt gacatcagat
 1200
 gttatttttc ctagatgaaa ataaaagtca agcagtgatt agtttcactc actgtcctag
 1260
 ctacacttaa tttgaagatt aaaattctac attgtggaaa acaattgaat ttattgggaa
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 1385

<210> 4098

<211> 258

<212> PRT

<213> Homo sapiens

<400> 4098

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Arg | Ser | Pro | Glu | Pro | Arg | Ala | Gly | Gln | Pro | Pro | Gly | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Pro | Arg | Ala | Leu | Gly | Arg | Val | Pro | Arg | Thr | Gly | Thr | Ala | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Ala | Arg | Leu | His | Asp | Ser | Leu | Arg | Ala | Val | Leu | Thr | Cys | Ser | Thr |
| | | | 35 | | | | | 40 | | | | | 45 | | |
| Met | Ser | Ala | Lys | Ser | Ala | Ile | Ser | Lys | Glu | Ile | Phe | Ala | Pro | Leu | Asp |
| | | | 50 | | | | | 55 | | | | 60 | | | |
| Glu | Arg | Met | Leu | Gly | Ala | Val | Gln | Val | Lys | Arg | Thr | Lys | Lys | Lys | |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ile | Pro | Phe | Leu | Ala | Thr | Gly | Gly | Gln | Gly | Glu | Tyr | Leu | Thr | Tyr | Ile |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Cys | Leu | Ser | Val | Thr | Asn | Lys | Lys | Pro | Thr | Gln | Ala | Ser | Ile | Thr | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Val | Lys | Gln | Phe | Glu | Gly | Ser | Thr | Ser | Phe | Val | Arg | Arg | Ser | Gln | Trp |
| | | | 115 | | | | | 120 | | | | | 125 | | |
| Met | Leu | Glu | Gln | Leu | Arg | Gln | Val | Asn | Gly | Ile | Asp | Pro | Asn | Gly | Asp |
| | | | | | | | 135 | | | | 140 | | | | |
| Ser | Ala | Glu | Phe | Asp | Leu | Leu | Phe | Glu | Asn | Ala | Phe | Asp | Gln | Trp | Val |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Ala | Ser | Thr | Ala | Ser | Glu | Lys | Cys | Thr | Phe | Phe | Gln | Ile | Leu | His | His |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Thr | Cys | Gln | Arg | Tyr | Leu | Thr | Asp | Arg | Lys | Pro | Glu | Phe | Ile | Asn | Cys |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gln | Ser | Lys | Ile | Met | Gly | Gly | Asn | Ser | Ile | Leu | His | Ser | Ala | Ala | Asp |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Ser | Val | Thr | Ser | Ala | Val | Gln | Lys | Ala | Ser | Gln | Ala | Leu | Asn | Glu | Arg |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Gly | Glu | Arg | Leu | Gly | Arg | Ala | Glu | Glu | Lys | Thr | Glu | Asp | Leu | Lys | Asn |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Ser | Ala | Gln | Gln | Phe | Ala | Glu | Thr | Ala | His | Lys | Leu | Ala | Met | Lys | His |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Cys | | | | | | | | | | | | | | |

<210> 4099
 <211> 511
 <212> DNA
 <213> Homo sapiens

<400> 4099
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 120
 ttaacaata aaaaattgta taatggaatt ggatcagggg gttcccaaaa cccccttcac
 180
 tgaggtttgg caattcactg agaaggactc acaggactca gcagatagtc atacttgggg
 240
 ctttgattta ttacatttaa tacagcaaaa agacacaaa caacatttga gaaaggaaaa
 300
 ggtgcatgtg tcaaagtctg gaggaagcca ggcacaagct acaggagtca tctcctgtgt
 360
 agctagcagg atatgcttaa ttccccagc ctcaaatttt gacgacacat gtgcaatggt
 420
 gtctacctta ccagagtttc attagaggct cagcacccat gttttcgatg gaggctagtc
 480
 acataggcaa cctctectct cctcaccg t
 511

<210> 4100
 <211> 100
 <212> PRT
 <213> Homo sapiens

<400> 4100
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 Gly Phe Asp Leu Leu His Leu Ile Gln Gln Lys Asp Thr Lys Gln His
 35 40 45
 Leu Arg Lys Glu Lys Val His Val Ser Lys Ser Gly Gly Ser Gln Ala
 50 55 60
 Gln Ala Thr Gly Val Ile Ser Cys Val Ala Ser Arg Ile Cys Leu Ile
 65 70 75 80
 Pro Pro Ala Ser Asn Phe Asp Asp Thr Cys Ala Met Leu Ser Thr Leu
 85 90 95
 Pro Glu Phe His
 100

<210> 4101
 <211> 536
 <212> DNA
 <213> Homo sapiens

<400> 4101

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 120
 ccaggaaaaga tggcacacgg cagacgacga caggaaggac acctgctccc cacccttccc
 180
 gggaccccg ccatgtgcaaa attcgagctg gggctctgcag ctgcttggag agaccaggg
 240
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 300
 cgcttggtca ctccccgcgc ccccatgca ggcagtggag gggaggacac gcaggaggac
 360
 cagacgctaa aggtgtaaac gggcagccgt ggcactcctc acctctcaat aaataagata
 420
 aataactaaa taaataaaca actaaataaa gacatgaagg aatggatgca gagacgtgaa
 480
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<210> 4102

<211> 106

<212> PRT

<213> Homo sapiens

<400> 4102

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Cys | Leu | Leu | Ser | Trp | Thr | Arg | Ile | Ala | Val | Trp | Gly | Pro | Ser | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Arg | Val | Cys | Thr | Arg | Tyr | Lys | Ile | Gln | Glu | Arg | Trp | His | Thr | Ala | Asp |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Asp | Arg | Lys | Asp | Thr | Cys | Ser | Pro | Pro | Phe | Pro | Gly | Pro | Arg | His |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Val | Gln | Asn | Ser | Ser | Trp | Gly | Leu | Gln | Leu | Leu | Gly | Glu | Thr | Gln | Gly |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Leu | Leu | Leu | His | Ser | Leu | Gln | Gly | Leu | Ser | Arg | Gln | Arg | Pro | Trp | Gly |
| | 65 | | | | 70 | | | | | 75 | | | | 80 | |
| Gly | Glu | Ala | Pro | Ala | Trp | Ser | Leu | Pro | Ala | Pro | Pro | Met | Gln | Ala | Val |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Glu | Gly | Arg | Thr | Arg | Arg | Arg | Thr | Arg | Arg | | | | | | |
| | | | 100 | | | | | 105 | | | | | | | |

<210> 4103

<211> 3040

<212> DNA

<213> Homo sapiens

<400> 4103

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 120
 gaggaggaag gcggtgacga gtctgacctg agttcggaat ccagcattaa gaagaaatct
 180
 caagaggaaa ggaaagaccg acagtcctctg gataagccag ccaggaaaag gaggcggaga
 240

agtagaaaga agcccagcgg tgccctcggt tctgagtcgt ataagtcac tgcaggaagc
300
gctgagcaga cggcaccagg agacagcaca gggtagatgg aagtttctct ggactccctg
360
gatctccgag tcaaaggaat tctgtcttca caagcagaag ggttgccaa cggccagat
420
gtgctggaga cagacggcct ccaggaagtg cctctctgca gctgccggat ggaaacaccg
480
aagagtcgag agatcaccac actggccaac aaccagtgc tggctacaga gagcgtggac
540
catgaattgg gccgggtgcac aaacagcgtg gtcaagtatg agctgatgcg cccctccaac
600
aaggccccgc tctcgtgct gtgtgaagac caccggggcc gcatggtgaa gcaccagtgc
660
tgtcctggct gtggctactt ctgcacagcg ggtaatttta tggagtgtca gcccagagc
720
agcatctctc accgtttcca caaagactgt gcctctcgag tcaataacgc cagctattgt
780
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840
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1020
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1080
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1140
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1440
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1620
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1740
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1800
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1920

gagaggatag tgagcagggg catcgctcga ggctacgagc gcatcccat cccctgtgtc
 1980
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 2040
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 2100
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 2160
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 2220
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 2280
 aggctgcagc tctaccggac gcgggacatg ggctggggcg tgcggtcctt gcaggacatc
 2340
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 2400
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 2460
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 2520
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 2640
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 2700
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 2760
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 2820
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 2880
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 2940
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 3040

<210> 4104

<211> 978

<212> PRT

<213> Homo sapiens

<400> 4104

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ala | Ala | Phe | Pro | Thr | Glu | Asp | Ser | Arg | Thr | Ser | Lys | Glu | Ser | Met |
| 1 | | | | 5 | | | | | 10 | | | | 15 | | |
| Ser | Glu | Ala | Asp | Arg | Ala | Gln | Lys | Met | Asp | Gly | Glu | Ser | Glu | Glu | Glu |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Gln | Glu | Ser | Val | Asp | Thr | Gly | Glu | Glu | Glu | Gly | Gly | Asp | Glu | Ser | |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Leu | Ser | Ser | Glu | Ser | Ser | Ile | Lys | Lys | Lys | Ser | Gln | Glu | Glu | Arg |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Arg | Gln | Ser | Leu | Asp | Lys | Pro | Ala | Arg | Lys | Arg | Arg | Arg | Arg |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Arg | Lys | Lys | Pro | Ser | Gly | Ala | Leu | Gly | Ser | Glu | Ser | Tyr | Lys | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ser | Ala | Gly | Ser | Ala | Glu | Gln | Thr | Ala | Pro | Gly | Asp | Ser | Thr | Gly | Tyr |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Met | Glu | Val | Ser | Leu | Asp | Ser | Leu | Asp | Leu | Arg | Val | Lys | Gly | Ile | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ser | Ser | Gln | Ala | Glu | Gly | Leu | Ala | Asn | Gly | Pro | Asp | Val | Leu | Glu | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asp | Gly | Leu | Gln | Glu | Val | Pro | Leu | Cys | Ser | Cys | Arg | Met | Glu | Thr | Pro |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Lys | Ser | Arg | Glu | Ile | Thr | Thr | Leu | Ala | Asn | Asn | Gln | Cys | Met | Ala | Thr |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Glu | Ser | Val | Asp | His | Glu | Leu | Gly | Arg | Cys | Thr | Asn | Ser | Val | Val | Lys |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Tyr | Glu | Leu | Met | Arg | Pro | Ser | Asn | Lys | Ala | Pro | Leu | Leu | Val | Leu | Cys |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Glu | Asp | His | Arg | Gly | Arg | Met | Val | Lys | His | Gln | Cys | Cys | Pro | Gly | Cys |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Gly | Tyr | Phe | Cys | Thr | Ala | Gly | Asn | Phe | Met | Glu | Cys | Gln | Pro | Glu | Ser |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Ile | Ser | His | Arg | Phe | His | Lys | Asp | Cys | Ala | Ser | Arg | Val | Asn | Asn |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Ala | Ser | Tyr | Cys | Pro | His | Cys | Gly | Glu | Glu | Ser | Ser | Lys | Ala | Lys | Glu |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| Val | Thr | Ile | Ala | Lys | Ala | Asp | Thr | Thr | Ser | Thr | Val | Thr | Pro | Val | Pro |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Gly | Gln | Glu | Lys | Gly | Ser | Ala | Xaa | Gly | Gly | Arg | Ala | Asp | Thr | Thr | Thr |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Gly | Ser | Ala | Xaa | Pro | Gly | His | His | Ser | Arg | Arg | Thr | Thr | Ser | Cys | Arg |
| 305 | | | | 310 | | | | | 315 | | | | | 320 | |
| Val | Gln | Pro | Pro | Thr | Xaa | Pro | Glu | Gly | Phe | Asp | Pro | Thr | Gly | Pro | Ala |
| | | | 325 | | | | | | 330 | | | | | 335 | |
| Gly | Leu | Gly | Arg | Pro | Thr | Pro | Gly | Leu | Ser | Gln | Gly | Pro | Gly | Lys | Glu |
| | | 340 | | | | | 345 | | | | | | 350 | | |
| Thr | Leu | Glu | Ser | Ala | Leu | Ile | Ala | Leu | Asp | Ser | Glu | Lys | Pro | Lys | Lys |
| | 355 | | | | | | 360 | | | | | 365 | | | |
| Leu | Arg | Phe | His | Pro | Lys | Gln | Leu | Tyr | Phe | Ser | Ala | Arg | Gln | Gly | Glu |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Leu | Gln | Lys | Val | Leu | Leu | Met | Leu | Val | Asp | Gly | Ile | Asp | Pro | Asn | Phe |
| 385 | | | | 390 | | | | | 395 | | | | | 400 | |
| Lys | Met | Glu | His | Gln | Asn | Lys | Arg | Ser | Pro | Leu | His | Ala | Ala | Ala | Glu |
| | | | 405 | | | | | | 410 | | | | | 415 | |
| Ala | Gly | His | Val | Asp | Ile | Cys | His | Met | Leu | Val | Gln | Ala | Gly | Ala | Asn |
| | | 420 | | | | | | 425 | | | | | 430 | | |
| Ile | Asp | Thr | Cys | Ser | Glu | Asp | Gln | Arg | Thr | Pro | Leu | Met | Glu | Ala | Ala |
| | 435 | | | | | | 440 | | | | | 445 | | | |
| Glu | Asn | Asn | His | Leu | Glu | Ala | Val | Lys | Tyr | Leu | Ile | Lys | Ala | Gly | Ala |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Leu | Val | Asp | Pro | Lys | Asp | Ala | Glu | Gly | Ser | Thr | Cys | Leu | His | Leu | Ala |
| 465 | | | | 470 | | | | | 475 | | | | | 480 | |
| Ala | Lys | Lys | Gly | His | Tyr | Glu | Val | Val | Gln | Tyr | Leu | Leu | Ser | Asn | Gly |
| | | | 485 | | | | | | 490 | | | | | 495 | |
| Arg | Met | Asp | Val | Asn | Cys | Gln | Asp | Asp | Gly | Gly | Trp | Thr | Pro | Met | Ile |

3289

930 935 940
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 945 950 955 960
 Gln Pro Lys Gly Ser Phe Gly Ala Ala Pro Pro Ala Ser Trp Arg Gly
 965 970 975
 Arg Arg

<210> 4105
 <211> 775
 <212> DNA
 <213> Homo sapiens

<400> 4105
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 180
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 420
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 660
 gccttaactc cagatggggg ggtcaccaag agggagtggg caccctggcg ggccctctcc
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 775

<210> 4106
 <211> 186
 <212> PRT
 <213> Homo sapiens

<400> 4106
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 Ser Tyr Thr Val Leu Gly Asp Thr Leu Ile Asp Gly Gly Glu His Tyr
 35 40 45
 Trp Glu Val Arg Tyr Glu Pro Asp Ser Lys Ala Phe Gly Val Gly Val

50 55 60
 Ala Tyr Arg Ser Leu Gly Arg Phe Glu Gln Leu Gly Lys Thr Ala Ala
 65 70 75 80
 Ser Trp Cys Leu His Ser Thr Ile Gly Cys Arg Ser Ala Ser Arg Lys
 85 90 95
 His Ala Asn Lys Val Lys Val Leu Asp Ala Pro Val Pro Asp Cys Leu
 100 105 110
 Gly Val His Cys Asp Phe His Gln Gly Leu Leu Ser Phe Tyr Asn Ala
 115 120 125
 Arg Thr Lys Gln Val Leu His Thr Phe Lys Thr Arg Phe Thr Gln Pro
 130 135 140
 Leu Leu Pro Ala Phe Thr Val Trp Cys Gly Ser Phe Gln Val Thr Thr
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 165 170 175
 Ala Thr Ser Ser Ser Asn Thr Ser Leu Thr
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<210> 4107
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 <212> DNA
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 180
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 240
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 540
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 720
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 780
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 1080
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<211> 375

<212> PRT

<213> Homo sapiens

<400> 4110

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<211> 2599

<212> DNA

<213> Homo sapiens

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<212> PRT

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| Gln | Cys | Met | Arg | Lys | Val | Gly | Leu | Trp | Gly | Phe | Gln | Gln | Ile | Glu | Ser |
| | | | | 165 | | | | 170 | | | | | | 175 | |
| Ser | Met | Thr | Asp | Leu | Asp | Ala | Ser | Phe | Gly | Leu | Thr | Ser | Ser | Pro | Ile |
| | | | 180 | | | | | 185 | | | | | | 190 | |
| Pro | Gly | Leu | Glu | Gly | Arg | Pro | Glu | Arg | Leu | Pro | Leu | Val | Pro | Glu | Ser |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Pro | Arg | Arg | Met | Met | Thr | Arg | Ser | Gln | Asp | Ala | Thr | Phe | Ser | Pro | Gly |

| | | |
|-------------------------|-------------------------|---------------------|
| 210 | 215 | 220 |
| Ser Glu Gln Ala Glu Lys | Ser Pro Gly Pro Ile Val | Ser Arg Thr Arg |
| 225 | 230 | 235 |
| Ser Trp Asp Ser Ser | Ser Pro Val Asp Arg Pro | Glu Pro Glu Ala Ala |
| 245 | 250 | 255 |
| Ser Pro Thr Thr Arg Thr | Arg Pro Val Thr Arg Ser | Met Gly Thr Gly |
| 260 | 265 | 270 |
| Asp Thr Pro Gly Leu Glu | Val Pro Ser Ser Xaa Ser | Ala Glu Ser Gln |
| 275 | 280 | 285 |
| Ala Ser Ser Leu Cys Ser | Ser Ser Ser Ser Asp Thr | Ser Ser Arg Ser |
| 290 | 295 | 300 |
| Phe Phe Asp Pro Thr Ser | Gln His Arg Asp Trp Cys | Pro Trp Val Asn |
| 305 | 310 | 315 |
| Ile Thr Leu Gly Lys Glu | Ser Arg Glu Asn Gly Gly | Thr Glu Pro Asp |
| 325 | 330 | 335 |
| Ala Ser Ala Pro Ala Glu | Pro Gly Trp Lys Ala Val | Leu Thr Ile Leu |
| 340 | 345 | 350 |
| Leu Ala His Lys Gln Ser | Ser Gln Pro Ala Glu Thr | Asp Ser Met Ser |
| 355 | 360 | 365 |
| Leu Ser Glu Lys Ser Arg | Lys Val Phe Arg Ile Phe | Arg Gln Trp Glu |
| 370 | 375 | 380 |
| Ser Leu Cys Ser Cys | | |
| 385 | | |

<210> 4115

<211> 1056

<212> DNA

<213> Homo sapiens

<400> 4115

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420
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720

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 840
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 900
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 960
 ccttttatca ttattcacac tcctctgccc tcgatttgca tgaagttgaa aattgttgcg
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 1056

<210> 4116

<211> 151

<212> PRT

<213> Homo sapiens

<400> 4116

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Phe | Glu | Ala | Ser | Ala | Phe | Ser | Tyr | Tyr | Gly | Val | Met | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Ala | Ser | Pro | Gly | Glu | Asn | Lys | Ser | Pro | Pro | Arg | Pro | Cys | Gly | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asn | His | Ser | Asp | Ser | Leu | Ser | Arg | Ser | Asp | Arg | Ile | Asp | Ala | Val | Thr |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Pro | Thr | Leu | Gly | Ser | Ser | Asn | Asn | Gln | Leu | Asn | Ser | Ser | Leu | Leu | Gln |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Val | Tyr | Ile | Pro | Asp | Tyr | Ser | Val | Arg | Ala | Leu | Ser | Asp | Leu | Gln | Phe |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Val | Lys | Ile | Ser | Arg | Gln | Gln | Tyr | Gln | Asn | Ala | Leu | Met | Ala | Ser | Arg |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Met | Asp | Lys | Thr | Pro | Gln | Ser | Ser | Asp | Ser | Glu | Asn | Thr | Lys | Ile | Glu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Thr | Leu | Thr | Glu | Leu | His | Asp | Gly | Leu | Pro | Asp | Glu | Thr | Ala | Asn |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Leu | Leu | Asn | Glu | Gln | Asn | Cys | Val | Thr | His | Ser | Lys | Ala | Asn | His | Ser |
| | 130 | | | | | 135 | | | | | | 140 | | | |
| Leu | His | Asn | Glu | Gly | Ala | Ile | | | | | | | | | |
| 145 | | | | | | 150 | | | | | | | | | |

<210> 4117

<211> 973

<212> DNA

<213> Homo sapiens

<400> 4117

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 120
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 180
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 240

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 300
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 360
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 420
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 480
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 660
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<210> 4118

<211> 128

<212> PRT

<213> Homo sapiens

<400> 4118

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Arg | Gln | Arg | Pro | Val | Ser | Gly | Tyr | Pro | Pro | Pro | Ser | His | Ala |
| 1 | | | 5 | | | | | 10 | | | | | | 15 | |
| His | Leu | Gly | Pro | Gln | Ala | Gln | Pro | Ala | Val | Gln | Ala | His | Asp | Trp | Pro |
| | 20 | | | | | | 25 | | | | | 30 | | | |
| Gly | Cys | Gly | Arg | Trp | Pro | Gln | Pro | Pro | Gly | Gly | Ile | Leu | Glu | Trp | Glu |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Arg | Cys | Val | Gly | Cys | Pro | Arg | Pro | Ala | Arg | Pro | Ala | Ser | Pro | Ser | Pro |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Gly | Glu | Ala | Thr | Pro | Pro | Pro | Ser | Ser | Gly | Ile | Ser | Ala | Val | Lys | Pro |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Pro | Leu | Arg | Ser | Pro | Arg | Thr | Leu | Pro | Leu | Glu | Leu | Gly | Thr | Gly | Gly |
| | | 85 | | | | | | 90 | | | | | 95 | | |
| Cys | Val | Cys | Ala | Gly | Leu | Gly | Pro | Asn | Thr | Pro | Gly | Cys | Gln | Leu | His |
| | 100 | | | | | | 105 | | | | | 110 | | | |
| Pro | Pro | Ala | Val | Leu | Cys | Pro | Gln | Gly | Leu | Gly | Arg | His | Gln | Arg | Leu |
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<210> 4119

<211> 649

<212> DNA

<213> Homo sapiens

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 420
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<210> 4120
 <211> 100
 <212> PRT
 <213> Homo sapiens

<400> 4120
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 Cys Ile Leu Val Ser Ile Val Thr Glu Phe Val Ser Asn Pro Ala Thr
 35 40 45
 Ile Thr Ile Phe Leu Pro Ile Leu Cys Ser Leu Val Ser Asn Ala Glu
 50 55 60
 Leu Pro Asp Ile Gln Thr Gly Cys Pro Arg Gly Leu Glu Trp Gln Ala
 65 70 75 80
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 His Ser Leu His
 100

<210> 4121
 <211> 2490
 <212> DNA
 <213> Homo sapiens

<400> 4121
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180
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300
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420
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480
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540
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 1860
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 1920
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 1980
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 2040
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 2160
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 2220
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 2280
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 2340
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 2490

<210> 4122

<211> 494

<212> PRT

<213> Homo sapiens

<400> 4122

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 35 40 45
 Ser Lys Pro Gly Pro Asp Pro Leu Asp Thr Arg Arg Leu Gln Gly Phe
 50 55 60
 Arg Leu Glu Glu Tyr Leu Ile Gly Gln Ser Ile Gly Lys Gly Cys Ser
 65 70 75 80
 Ala Ala Val Tyr Glu Ala Thr Met Pro Thr Leu Pro Gln Asn Leu Glu
 85 90 95
 Val Thr Lys Ser Thr Gly Leu Leu Pro Gly Arg Gly Pro Gly Thr Ser
 100 105 110
 Ala Pro Gly Glu Gly Gln Glu Arg Ala Pro Gly Ala Pro Ala Phe Pro
 115 120 125
 Leu Ala Ile Lys Met Met Trp Asn Ile Ser Ala Gly Ser Ser Ser Glu
 130 135 140
 Ala Ile Leu Asn Thr Met Ser Gln Glu Leu Val Pro Ala Ser Arg Val

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145          150          155          160
Ala Leu Ala Gly Glu Tyr Gly Ala Val Thr Tyr Arg Lys Ser Lys Arg
          165          170          175
Gly Pro Lys Gln Leu Ala Pro His Pro Asn Ile Ile Arg Val Leu Arg
          180          185          190
Ala Phe Thr Ser Ser Val Pro Leu Leu Pro Gly Ala Leu Val Asp Tyr
          195          200          205
Pro Asp Val Leu Pro Ser Arg Leu His Pro Glu Gly Leu Gly His Gly
          210          215          220
Arg Thr Leu Phe Leu Val Met Lys Asn Tyr Pro Cys Thr Leu Arg Gln
225          230          235          240
Tyr Leu Cys Val Asn Thr Pro Ser Pro Arg Leu Ala Ala Met Met Leu
          245          250          255
Leu Gln Leu Leu Glu Gly Val Asp His Leu Val Gln Gln Gly Ile Ala
          260          265          270
His Arg Asp Leu Lys Ser Asp Asn Ile Leu Val Glu Leu Asp Pro Asp
          275          280          285
Gly Cys Pro Trp Leu Val Ile Ala Asp Phe Gly Cys Cys Leu Ala Asp
          290          295          300
Glu Ser Ile Gly Leu Gln Leu Pro Phe Ser Ser Trp Tyr Val Asp Arg
305          310          315          320
Gly Gly Asn Gly Cys Leu Met Ala Pro Glu Val Ser Thr Ala Arg Pro
          325          330          335
Gly Pro Arg Ala Val Ile Asp Tyr Ser Lys Ala Asp Ala Trp Ala Val
          340          345          350
Gly Ala Ile Ala Tyr Glu Ile Phe Gly Leu Val Asn Pro Phe Tyr Gly
          355          360          365
Gln Gly Lys Ala His Leu Glu Ser Arg Ser Tyr Gln Glu Ala Gln Leu
          370          375          380
Pro Ala Leu Pro Glu Ser Val Pro Pro Asp Val Arg Gln Leu Val Arg
385          390          395          400
Ala Leu Leu Gln Arg Glu Ala Ser Lys Arg Pro Ser Ala Arg Val Ala
          405          410          415
Ala Asn Val Leu His Leu Ser Leu Trp Gly Glu His Ile Leu Ala Leu
          420          425          430
Lys Asn Leu Lys Leu Asp Lys Met Val Gly Trp Leu Leu Gln Gln Ser
          435          440          445
Ala Ala Thr Leu Leu Ala Asn Arg Leu Thr Glu Lys Cys Cys Val Glu
          450          455          460
Thr Lys Met Lys Met Leu Phe Leu Ala Asn Leu Glu Cys Glu Thr Leu
465          470          475          480
Cys Gln Ala Ala Leu Leu Leu Cys Ser Trp Arg Ala Ala Leu
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<210> 4123

<211> 1095

<212> DNA

<213> Homo sapiens

<400> 4123

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120

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 300
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 480
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 960
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 1095

<210> 4124

<211> 155

<212> PRT

<213> Homo sapiens

<400> 4124

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ala | Ala | Gly | Ala | Gly | Ala | Gly | Val | Glu | Ala | Gly | Phe | Ser | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Glu | Leu | Leu | Ser | Leu | Arg | Phe | Pro | Leu | His | Arg | Ala | Cys | Arg | Asp |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Gly | Asp | Leu | Ala | Thr | Leu | Cys | Ser | Leu | Leu | Gln | Gln | Thr | Pro | His | Ala |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| His | Leu | Ala | Ser | Glu | Asp | Ser | Phe | Tyr | Gly | Trp | Thr | Pro | Val | His | Trp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Ala | His | Phe | Gly | Lys | Leu | Glu | Cys | Leu | Val | Gln | Leu | Val | Arg | Ala |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gly | Ala | Thr | Leu | Asn | Val | Ser | Thr | Thr | Arg | Tyr | Ala | Gln | Thr | Pro | Ala |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| His | Ile | Ala | Ala | Phe | Gly | Gly | His | Pro | Gln | Cys | Leu | Val | Trp | Leu | Ile |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Gln | Ala | Gly | Ala | Asn | Ile | Asn | Lys | Pro | Asp | Cys | Glu | Gly | Glu | Thr | Pro |
| | 115 | | 120 | | 125 | | | | | | | | | | |
| Ile | His | Lys | Ala | Ala | Arg | Ser | Gly | Ser | Leu | Glu | Cys | Ile | Ser | Ala | Leu |
| | 130 | | 135 | | 140 | | | | | | | | | | |
| Val | Ala | Asn | Gly | Ala | His | Val | Asp | Ser | Gln | His | | | | | |
| 145 | | | 150 | | | | | | 155 | | | | | | |

<210> 4125

<211> 4711

<212> DNA

<213> Homo sapiens

<400> 4125

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<212> PRT

<213> Homo sapiens

<400> 4130

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Asn | His | Glu | Leu | Val | Pro | Ile | Thr | Thr | Glu | Asn | Ala | Pro | Glu | Asn |
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| Val | Val | Asp | Gln | Gly | Ala | Gly | Ala | Ser | Arg | Gly | Gly | Asn | Thr | Arg | Lys |
| | | 35 | | | | 40 | | | | | | 45 | | | |
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| His | Leu | Gln | Pro | Ile | Arg | Asn | Met | Ser | Val | Ser | Arg | Thr | Met | Glu | Asp |
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| Ser | Cys | Glu | Leu | Asp | Leu | Val | Tyr | Val | Thr | Glu | Arg | Ile | Ile | Ala | Val |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Ser | Phe | Pro | Ser | Thr | Ala | Asn | Glu | Glu | Asn | Phe | Arg | Ser | Asn | Leu | Arg |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Glu | Val | Ala | Gln | Met | Leu | Lys | Ser | Lys | His | Gly | Gly | Asn | Tyr | Leu | Leu |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Phe | Asn | Leu | Ser | Glu | Arg | Arg | Pro | Asp | Ile | Thr | Lys | Leu | His | Ala | Lys |
| | 130 | | | | 135 | | | | | | 140 | | | | |
| Val | Leu | Glu | Phe | Gly | Trp | Pro | Asp | Leu | His | Thr | Pro | Ala | Leu | Glu | Lys |
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| Ile | Cys | Ser | Ile | Cys | Lys | Ala | Met | Asp | Thr | Trp | Leu | Asn | Ala | Asp | Pro |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| His | Asn | Val | Val | Val | Leu | His | Asn | Lys | Gly | Asn | Arg | Gly | Arg | Ile | Gly |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Val | Val | Ile | Ala | Ala | Tyr | Met | His | Tyr | Ser | Asn | Ile | Ser | Ala | Ser | Ala |
| | 195 | | | | | 200 | | | | | 205 | | | | |
| Asp | Gln | Ala | Leu | Asp | Arg | Phe | Ala | Met | Lys | Arg | Phe | Tyr | Glu | Asp | Lys |
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| Ile | Val | Pro | Ile | Gly | Gln | Pro | Ser | Gln | Arg | Arg | Tyr | Val | His | Tyr | Phe |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Gly | Leu | Leu | Ser | Gly | Ser | Ile | Lys | Met | Asn | Asn | Lys | Pro | Leu | Phe |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Leu | His | His | Val | Ile | Met | His | Gly | Ile | Pro | Asn | Phe | Glu | Ser | Lys | Gly |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| Gly | Cys | Arg | Pro | Phe | Leu | Arg | Ile | Tyr | Gln | Ala | Met | Gln | Pro | Val | Tyr |
| | | 275 | | | | 280 | | | | | | 285 | | | |
| Thr | Ser | Gly | Ile | Tyr | Asn | Ile | Pro | Gly | Asp | Ser | Gln | Thr | Ser | Val | Cys |
| | 290 | | | | 295 | | | | | | 300 | | | | |
| Ile | Thr | Ile | Glu | Pro | Gly | Leu | Leu | Leu | Lys | Gly | Asp | Ile | Leu | Leu | Lys |

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 Cys Tyr His Lys Lys Phe Arg Ser Pro Ala Arg Asp Val Ile Phe Arg
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 Val Gln Phe His Thr Cys Ala Ile His Ala Trp Gly Val Val Phe Gly
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 Lys Glu Asp Leu Asp Asp Ala Phe Lys Asp Asp Arg Phe Pro Glu Tyr
 355 360 365
 Gly Lys Val Glu Phe Val Phe Ser Tyr Gly Pro Glu Lys Ile Gln Gly
 370 375 380
 Met Glu His Leu Glu Asn Gly Pro Ser Val Ser Val Asp Tyr Asn Thr
 385 390 395 400
 Ser Asp Pro Leu Ile Arg Trp Asp Ser Tyr Asp Asn Phe Ser Gly His
 405 410 415
 Arg Asp Asp Gly Met Glu Glu Val Val Gly His Thr Gln Gly Pro Leu
 420 425 430
 Asp Gly Ser Leu Tyr Ala Lys Val Lys Lys Lys Asp Ser Leu His Gly
 435 440 445
 Ser Thr Gly Ala Val Asn Ala Thr Arg Pro Thr Leu Ser Ala Thr Pro
 450 455 460
 Asn His Val Glu His Thr Leu Ser Val Ser Ser Asp Ser Gly Asn Ser
 465 470 475 480
 Thr Ala Ser Thr Lys Thr Asp Lys Thr Asp Glu Pro Val Pro Gly Ala
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 <213> Homo sapiens

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<210> 4132
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4132
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Val Leu Val Arg Asn Pro Gly His Lys Gly Leu Arg Pro Val Tyr Glu
35 40 45
Glu Leu Asp Ser Asp Ser Glu Asp Leu Asp Pro Asn Pro Glu Asp Leu
50 55 60
Asp Pro Val Ser Glu Asp Pro Glu Pro Asp Pro Glu Asp Leu Asn Thr
65 70 75 80
Val Pro Glu Asp Val Asp Pro Ser Tyr Glu Asp Leu Glu Pro Val Ser
85 90 95
Glu Asp Leu Asp Pro Asp Ala Glu Ala Pro Gly Ser Glu Pro Gln Asp
100 105 110
Pro Asp Pro Met Ser Ser Ser Phe Asp Leu Asp Pro Asp Val Ile Gly
115 120 125
Pro Val Pro Leu Ile Leu Asp Pro Asn Ser Asp Thr Leu Ser Pro Gly
130 135 140
Asp Pro Lys Val Asp Pro Xaa Ser Pro Leu Ala Ser Leu Arg Ala Pro
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Pro Gly

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<212> DNA
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240
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<211> 329

<212> PRT

<213> Homo sapiens

<400> 4134

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 Ser Glu Gly Glu Gly Glu Ala Ala Ser Ala Asp Asp Gly Ser Leu Asn
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 Thr Ser Gly Ala Gly Pro Lys Ser Trp Gln Val Pro Pro Pro Ala Pro
 65 70 75 80
 Glu Val Gln Ile Arg Thr Pro Arg Val Asn Cys Pro Glu Lys Val Ile
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 Ile Cys Leu Asp Leu Ser Glu Glu Met Ser Leu Pro Lys Leu Glu Ser
 100 105 110
 Phe Asn Gly Ser Lys Thr Asn Ala Leu Asn Val Ser Gln Lys Met Ile
 115 120 125
 Glu Met Phe Val Arg Thr Lys His Lys Ile Asp Lys Ser His Glu Phe
 130 135 140
 Ala Leu Val Val Val Asn Asp Asp Thr Ala Trp Leu Ser Gly Leu Thr
 145 150 155 160
 Ser Asp Pro Arg Glu Leu Cys Ser Cys Leu Tyr Asp Leu Glu Thr Ala
 165 170 175
 Ser Cys Ser Thr Phe Asn Leu Glu Gly Leu Phe Ser Leu Ile Gln Gln
 180 185 190
 Lys Thr Glu Leu Pro Val Thr Glu Asn Val Gln Thr Ile Pro Pro Pro
 195 200 205
 Tyr Val Val Arg Thr Ile Leu Val Tyr Ser Arg Pro Pro Cys Gln Pro
 210 215 220
 Gln Phe Ser Leu Thr Glu Pro Met Lys Lys Met Phe Gln Cys Pro Tyr
 225 230 235 240
 Phe Phe Phe Asp Val Val Tyr Ile His Asn Gly Thr Glu Glu Lys Glu
 245 250 255
 Glu Glu Met Ser Trp Lys Asp Met Phe Ala Phe Met Gly Ser Leu Asp
 260 265 270
 Thr Lys Gly Thr Ser Tyr Lys Tyr Glu Val Ala Leu Ala Gly Pro Ala
 275 280 285
 Leu Glu Leu His Asn Cys Met Ala Lys Leu Leu Ala His Pro Leu Gln
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<210> 4135

<211> 388

<212> DNA

<213> Homo sapiens

<400> 4135

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180

catggatctt gaggaccac gaccaatctt tgactggatg cagatcatcc gcaaacgggc

240

agtgggtctat gtcggcctgg acgctttatc tgatacagag gtagctgcag cggtagggcaa
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 35 40 45
 Leu Leu Ser Pro Asp Tyr Met Asp Leu Glu Asp Pro Arg Pro Ile Phe
 50 55 60
 Asp Trp Met Gln Ile Ile Arg Lys Arg Ala Val Val Tyr Val Gly Leu
 65 70 75 80
 Asp Ala Leu Ser Asp Thr Glu Val Ala Ala Val Gly Asn Ser Met
 85 90 95
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<210> 4137
 <211> 2255
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<210> 4138

<211> 353

<212> PRT

<213> Homo sapiens

<400> 4138

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Trp | Lys | Asn | Asp | Tyr | Arg | Gln | Leu | Glu | Lys | Glu | Leu | Gln | Gly | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asn | Val | Glu | Ala | Val | Asp | Pro | Arg | Gly | Arg | Thr | Leu | Leu | His | Leu | Ala |
| | | | 35 | | | | | 40 | | | | | 45 | | |
| Val | Ser | Leu | Gly | His | Leu | Glu | Ser | Ala | Arg | Val | Leu | Leu | Arg | His | Lys |
| | | | 50 | | | | 55 | | | | 60 | | | | |
| Ala | Asp | Val | Thr | Lys | Glu | Asn | Arg | Gln | Gly | Trp | Thr | Val | Leu | His | Glu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ala | Val | Ser | Thr | Gly | Asp | Pro | Glu | Met | Val | Tyr | Thr | Val | Leu | Gln | His |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Arg | Asp | Tyr | His | Asn | Thr | Ser | Met | Ala | Leu | Glu | Gly | Val | Pro | Glu | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Gln | Lys | Ile | Leu | Glu | Ala | Pro | Asp | Phe | Tyr | Val | Gln | Met | Lys | Trp |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Glu | Phe | Thr | Ser | Trp | Val | Pro | Leu | Val | Ser | Arg | Ile | Cys | Pro | Asn | Asp |
| | | | 130 | | | | 135 | | | | | 140 | | | |
| Val | Cys | Arg | Ile | Trp | Lys | Ser | Gly | Ala | Lys | Leu | Arg | Val | Asp | Ile | Thr |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Leu | Leu | Gly | Phe | Glu | Asn | Met | Ser | Trp | Ile | Arg | Gly | Arg | Arg | Ser | Phe |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Ile | Phe | Lys | Gly | Glu | Asp | Asn | Trp | Ala | Glu | Leu | Met | Glu | Val | Asn | His |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Asp | Asp | Lys | Val | Val | Thr | Thr | Glu | Arg | Phe | Asp | Leu | Ser | Gln | Glu | Met |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Glu | Arg | Leu | Thr | Leu | Asp | Leu | Met | Lys | Pro | Lys | Ser | Arg | Glu | Val | Glu |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Arg | Arg | Leu | Thr | Ser | Pro | Val | Ile | Asn | Thr | Ser | Leu | Asp | Thr | Lys | Asn |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Ile | Ala | Phe | Glu | Arg | Thr | Lys | Ser | Gly | Phe | Trp | Gly | Trp | Arg | Thr | Asp |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ala | Glu | Val | Val | Asn | Gly | Tyr | Glu | Ala | Lys | Val | Tyr | Thr | Val | Asn |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asn | Val | Asn | Val | Ile | Thr | Lys | Ile | Arg | Thr | Glu | His | Leu | Thr | Glu | Glu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Glu | Lys | Lys | Arg | Tyr | Lys | Ala | Asp | Arg | Asn | Pro | Leu | Glu | Ser | Leu | Leu |
| | | 290 | | | | 295 | | | | | 300 | | | | |
| Gly | Thr | Val | Glu | His | Gln | Phe | Gly | Ala | Gln | Gly | Asp | Leu | Thr | Thr | Glu |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Cys | Ala | Thr | Ala | Asn | Asn | Pro | Thr | Ala | Ile | Thr | Pro | Asp | Glu | Tyr | Phe |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Asn | Glu | Glu | Phe | Asp | Leu | Xaa | Arg | Gln | Gly | His | Trp | Xaa | Gly | Arg | Lys |

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<211> 431
<212> DNA
<213> Homo sapiens

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120
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180
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<210> 4140
<211> 50
<212> PRT
<213> Homo sapiens
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<400> 4140
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Val Val Ala Val Gly Phe Pro Gly Gly Lys Cys Pro Val Pro Val Arg
      35          40          45
Val Pro
      50

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<211> 1182
<212> DNA
<213> Homo sapiens
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120
cgaaggagga gccggacact tgtctcccg tctccgagctg ctccccaccc ctggaggaga
180
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gacccccccc tcggctcggc gccttctgcg tctcccggt ggtggggaag cctctgcgcc
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<210> 4142

<211> 311

<212> PRT

<213> Homo sapiens

<400> 4142

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Asp | Asp | Ala | Asn | Lys | Lys | Trp | Val | Pro | Ala | Gly | Gly | Ser | Thr | Gly | Phe |
| | | 20 | | | | | | 25 | | | | 30 | | | |
| Ser | Arg | Val | His | Ile | Tyr | His | His | Thr | Gly | Asn | Asn | Thr | Phe | Arg | Val |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Val | Gly | Arg | Lys | Ile | Gln | Asp | His | Gln | Val | Val | Ile | Asn | Cys | Ala | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Pro | Lys | Gly | Leu | Lys | Tyr | Asn | Gln | Ala | Thr | Gln | Thr | Phe | His | Gln | Trp |
| 65 | | | | 70 | | | | | 75 | | | | 80 | | |
| Arg | Asp | Ala | Arg | Gln | Val | Tyr | Gly | Leu | Asn | Phe | Gly | Ser | Lys | Glu | Asp |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Ala | Asn | Val | Phe | Ala | Ser | Ala | Met | Met | His | Ala | Leu | Glu | Val | Leu | Asn |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Ser | Gln | Glu | Thr | Gly | Pro | Thr | Leu | Pro | Arg | Gln | Asn | Ser | Gln | Leu | Pro |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Ala | Gln | Val | Gln | Asn | Gly | Pro | Ser | Gln | Glu | Glu | Leu | Glu | Ile | Gln | Arg |
| | 130 | | | | | | 135 | | | | 140 | | | | |
| Arg | Gln | Leu | Gln | Glu | Gln | Gln | Arg | Gln | Lys | Glu | Leu | Glu | Arg | Glu | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Glu | Arg | Glu | Arg | Met | Glu | Arg | Glu | Arg | Leu | Glu | Arg | Glu | Arg | Leu |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Glu | Arg | Glu | Arg | Leu | Glu | Arg | Glu | Arg | Leu | Glu | Gln | Glu | Gln | Leu | Glu |
| | | 180 | | | | | 185 | | | | | 190 | | | |
| Arg | Glu | Arg | Gln | Glu | Arg | Glu | Arg | Gln | Glu | Arg | Leu | Glu | Arg | Gln | Glu |
| | 195 | | | | | 200 | | | | | 205 | | | | |
| Arg | Leu | Glu | Arg | Gln | Glu | Arg | Leu | Glu | Arg | Gln | Glu | Arg | Leu | Asp | Arg |
| | 210 | | | | 215 | | | | | 220 | | | | | |
| Glu | Arg | Glu | Arg | Gln | Glu | Arg | Glu | Arg | Leu | Glu | Arg | Leu | Glu | Arg | Glu |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Gln | Glu | Arg | Glu | Arg | Gln | Glu | Gln | Leu | Glu | Arg | Glu | Gln | Leu | Glu |
| | | | 245 | | | | | 250 | | | | | 255 | | |
| Trp | Glu | Arg | Glu | Arg | Arg | Ile | Ser | Ser | Ala | Ala | Ala | Pro | Ala | Ser | Val |
| | 260 | | | | | | 265 | | | | | 270 | | | |
| Glu | Thr | Pro | Leu | Asn | Ser | Val | Leu | Gly | Asp | Ser | Ser | Ala | Ser | Glu | Pro |
| | 275 | | | | | 280 | | | | | 285 | | | | |
| Gly | Leu | Gln | Ala | Ala | Ser | Gln | Pro | Ala | Glu | Thr | Pro | Ser | Gln | Gln | Gly |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ile | Val | Leu | Gly | Pro | Leu | Ala | | | | | | | | | |
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<210> 4143

<211> 1773

<212> DNA

<213> Homo sapiens

<400> 4143

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240

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300

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360

acggttatct agtcggcaat gccttcctg ccctgcagcc aatacccccc actgtgctgg

420

gccttctgca aatactcctg ggggtgaccc aaaccagtt tccagataaa agataaaaag

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540

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<210> 4144

<211> 231

<212> PRT

<213> Homo sapiens

<400> 4144

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Ala | Val | Phe | Glu | Gly | Thr | Ser | Leu | Val | Asn | Met | Phe | Val |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Arg | Gly | Cys | Trp | Val | Asn | Gly | Ile | Arg | Arg | Leu | Ile | Val | Ser | Arg | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gly | Asp | Glu | Glu | Glu | Phe | Phe | Glu | Ile | Arg | Thr | Glu | Trp | Ser | Asp | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ser | Val | Leu | Tyr | Leu | His | Arg | Ser | Leu | Ala | Asp | Leu | Gly | Arg | Leu | Trp |

```

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65              70              75              80
Gly Pro Leu Arg Gln Gly Leu Val Ala Ile Lys Glu Ala His Asp Ile
      85              90              95
Glu Thr Arg Leu Asn Glu Val Glu Lys Leu Leu Lys Thr Ile Ile Ser
      100             105             110
Met Pro Cys Lys Tyr Ser Arg Ser Glu Val Val Leu Thr Phe Phe Glu
      115             120             125
Arg Ser Pro Leu Asp Gln Val Leu Lys Asn Asp Asn Val His Lys Ile
      130             135             140
Gln Pro Ser Phe Gln Ser Pro Val Lys Ile Ser Glu Ile Met Arg Ser
145             150             155             160
Asn Gly Phe Cys Leu Ala Asn Thr Glu Thr Ile Val Ile Asp His Ser
      165             170             175
Ile Pro Asn Gly Arg Asp Gln Gln Leu Gly Val Asp Pro Thr Glu His
      180             185             190
Leu Phe Glu Asn Gly Ser Glu Phe Pro Ser Glu Leu Glu Asp Gly Asp
      195             200             205
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<210> 4145

<211> 400

<212> DNA

<213> Homo sapiens

<400> 4145

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<210> 4146

<211> 133

<212> PRT

<213> Homo sapiens

<400> 4146

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 Trp Ser Gly Pro Ser Pro Glu Gly Pro Val Pro Leu Thr Gly Glu Glu
 35 40 45
 Leu Asp Leu Arg Leu Ile Arg Thr Lys Gly Gly Val Asp Ala Ala Leu
 50 55 60
 Glu Tyr Ala Lys Thr Trp Ser Arg Tyr Ala Lys Glu Leu Leu Ala Trp
 65 70 75 80
 Thr Glu Lys Arg Ala Ser Tyr Glu Leu Glu Phe Ala Lys Ser Thr Met
 85 90 95
 Lys Ile Ala Glu Ala Gly Lys Val Ser Ile Gln Gln Gln Ser His Met
 100 105 110
 Pro Leu Gln Tyr Ile Tyr Thr Leu Phe Leu Glu His Asp Leu Ser Leu
 115 120 125
 Gly Thr Leu Ala Met
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<210> 4147

<211> 4892

<212> DNA

<213> Homo sapiens

<400> 4147

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<211> 697

<212> PRT

<213> Homo sapiens

<400> 4148

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Cys | Glu | Ile | Met | Pro | Leu | Gln | Ser | Ser | Gln | Glu | Asp | Glu | Arg | 1 | 5 | 10 | 15 |
| Pro | Leu | Ser | Pro | Phe | Tyr | Leu | Ser | Ala | His | Val | Pro | Gln | Val | Ser | Asn | 20 | 25 | 30 | |
| Val | Ser | Ala | Thr | Gly | Glu | Leu | Leu | Glu | Arg | Thr | Ile | Arg | Ser | Ala | Val | 35 | 40 | 45 | |
| Glu | Gln | His | Leu | Phe | Asp | Val | Asn | Asn | Ser | Gly | Gly | Gln | Ser | Ser | Glu | 50 | 55 | 60 | |
| Asp | Ser | Glu | Ser | Gly | Thr | Leu | Ser | Ala | Ser | Ser | Ala | Thr | Ser | Ala | Arg | 65 | 70 | 75 | 80 |
| Gln | Arg | Arg | Arg | Gln | Ser | Lys | Glu | Gln | Asp | Glu | Val | Arg | His | Gly | Arg | 85 | 90 | 95 | |
| Asp | Lys | Gly | Leu | Ile | Asn | Lys | Glu | Asn | Thr | Pro | Ser | Gly | Phe | Asn | His | 100 | 105 | 110 | |
| Leu | Asp | Asp | Cys | Ile | Leu | Asn | Thr | Gln | Glu | Val | Glu | Lys | Val | His | Lys | 115 | 120 | 125 | |
| Asn | Thr | Phe | Gly | Cys | Ala | Gly | Glu | Arg | Ser | Lys | Pro | Lys | Arg | Gln | Lys | 130 | 135 | 140 | |
| Ser | Ser | Thr | Lys | Leu | Ser | Glu | Leu | His | Asp | Asn | Gln | Asp | Gly | Leu | Val | 145 | 150 | 155 | 160 |
| Asn | Met | Glu | Ser | Leu | Asn | Ser | Thr | Arg | Ser | His | Glu | Arg | Thr | Gly | Pro | 165 | 170 | 175 | |
| Asp | Asp | Phe | Glu | Trp | Met | Ser | Asp | Glu | Arg | Lys | Gly | Asn | Glu | Lys | Asp | | | | |

180 185 190
 Gly Gly His Thr Gln His Phe Glu Ser Pro Thr Met Lys Ile Gln Glu
 195 200 205
 His Pro Ser Leu Ser Asp Thr Lys Gln Gln Arg Asn Gln Asp Ala Gly
 210 215 220
 Asp Gln Glu Glu Ser Phe Val Ser Glu Val Pro Gln Ser Asp Leu Thr
 225 230 235 240
 Ala Leu Cys Asp Glu Lys Asn Trp Glu Glu Pro Ile Pro Ala Phe Ser
 245 250 255
 Ser Trp Gln Arg Glu Asn Ser Asp Ser Asp Glu Ala His Leu Ser Pro
 260 265 270
 Gln Ala Gly Arg Leu Ile Arg Gln Leu Leu Asp Glu Asp Ser Asp Pro
 275 280 285
 Met Leu Ser Pro Arg Phe Tyr Ala Tyr Gly Gln Ser Arg Gln Tyr Leu
 290 295 300
 Asp Asp Thr Glu Val Pro Pro Ser Pro Pro Asn Ser His Ser Phe Met
 305 310 315 320
 Arg Arg Arg Ser Ser Ser Leu Gly Ser Tyr Asp Asp Glu Gln Glu Asp
 325 330 335
 Leu Thr Pro Ala Gln Leu Thr Arg Arg Ile Gln Ser Leu Lys Lys Lys
 340 345 350
 Ile Arg Lys Phe Glu Asp Arg Phe Glu Glu Glu Lys Lys Tyr Arg Pro
 355 360 365
 Ser His Ser Asp Lys Ala Ala Asn Pro Glu Val Leu Lys Trp Thr Asn
 370 375 380
 Asp Leu Ala Lys Phe Arg Arg Gln Leu Lys Glu Ser Lys Leu Lys Ile
 385 390 395 400
 Ser Glu Glu Asp Leu Thr Pro Arg Met Arg Gln Arg Ser Asn Thr Leu
 405 410 415
 Pro Lys Ser Phe Gly Ser Gln Leu Glu Lys Glu Asp Glu Lys Lys Gln
 420 425 430
 Glu Leu Val Asp Lys Ala Ile Lys Pro Ser Val Glu Ala Thr Leu Glu
 435 440 445
 Ser Ile Gln Arg Lys Leu Gln Glu Lys Arg Ala Glu Ser Ser Arg Pro
 450 455 460
 Glu Asp Ile Lys Asp Met Thr Lys Asp Gln Ile Ala Asn Glu Lys Val
 465 470 475 480
 Ala Leu Gln Lys Ala Leu Leu Tyr Tyr Glu Ser Ile His Gly Arg Pro
 485 490 495
 Val Thr Lys Asn Glu Arg Gln Val Met Lys Pro Leu Tyr Asp Arg Tyr
 500 505 510
 Arg Leu Val Lys Gln Ile Leu Ser Arg Ala Asn Thr Ile Pro Ile Ile
 515 520 525
 Gly Ser Pro Ser Ser Lys Arg Arg Ser Pro Leu Leu Gln Pro Ile Ile
 530 535 540
 Glu Gly Glu Thr Ala Ser Phe Phe Lys Glu Ile Lys Glu Glu Glu Glu
 545 550 555 560
 Gly Ser Glu Asp Asp Ser Asn Val Lys Pro Asp Phe Met Val Thr Leu
 565 570 575
 Lys Thr Asp Phe Ser Ala Arg Cys Phe Leu Asp Gln Phe Glu Asp Asp
 580 585 590
 Ala Asp Gly Phe Ile Ser Pro Met Asp Asp Lys Ile Pro Ser Lys Cys
 595 600 605
 Ser Gln Asp Thr Gly Leu Ser Asn Leu His Ala Ala Ser Ile Pro Glu

| | | |
|---|-----|-----|
| 610 | 615 | 620 |
| Leu Leu Glu His Leu Gln Glu Met Arg Glu Glu Lys Lys Arg Ile Arg | | |
| 625 | 630 | 635 |
| Lys Lys Leu Arg Asp Phe Glu Asp Asn Phe Phe Arg Gln Asn Gly Arg | | 640 |
| | 645 | 650 |
| Asn Val Gln Lys Glu Asp Arg Thr Pro Met Ala Glu Glu Tyr Ser Glu | | 655 |
| | 660 | 665 |
| Tyr Lys His Ile Lys Ala Lys Leu Arg Leu Leu Glu Val Leu Ile Ser | | 670 |
| | 675 | 680 |
| Lys Arg Asp Thr Asp Ser Lys Ser Met | | 685 |
| 690 | 695 | |

<210> 4149

<211> 1396

<212> DNA

<213> Homo sapiens

<400> 4149

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 120
 gatccggagg ccaggagctc aaccaccctt cttcggaaca gggccggcct gctgctgtgc
 180
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 360
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 420
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 720
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 780
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 960
 tatacttggt gttgctgtc atggacaccg gtgaacatgc cgtaactctg tgactgcatt
 1020
 gtaagtgcag tgggggtaag cagtcctgtg agtggcgcat gaacgctgga gcttattccg
 1080

ccgcctgccc cagtgtgggg ggagatacct ttaccatgaa cttacagaat taaagatggc
 1140
 ccataaggaa ttccagacca atatttcttc ctgcgggtta ttctatgttt tatatattat
 1200
 ctaaatatat gtatatgctg tgtcatactc ataatctgga aatgaataaa gtgatatatt
 1260
 cctggtttgt aaaaaaaaaa aaaaaatttg ctataaaatg agaagtctca ctgatagagg
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 1380
 atttgaaaa aaaaaa
 1396

<210> 4150
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 4150
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 20 25 30
 His Ile Lys Arg Ile Thr Asp Asn Asp Ile Gln Ser Leu Val Leu Glu
 35 40 45
 Ile Glu Gly Thr Asn Val Ser Thr Thr Tyr Ile Thr Cys Pro Ala Asp
 50 55 60
 Pro Lys Lys Thr Leu Gly Ile Lys Leu Pro Phe Leu Val Met Ile Ile
 65 70 75 80
 Lys Asn Leu Lys Lys Tyr Phe Thr Phe Glu Val Gln Val Leu Asp Asp
 85 90 95
 Lys Asn Val Arg Arg Arg Phe Arg Ala Ser Asn Tyr Gln Ser Thr Thr
 100 105 110
 Arg Val Lys Pro Phe Ile Cys Thr Met Pro Met Arg Leu Asp Asp Gly
 115 120 125
 Trp Asn Gln Ile Gln Phe Asn Leu Leu Asp Phe Thr Arg Arg Ala Tyr
 130 135 140
 Gly Thr Asn Tyr Ile Glu Thr Leu Arg Val Gln Ile His Ala Asn Cys
 145 150 155 160
 Arg Ile Arg Arg Val Tyr Phe Ser Asp Arg Leu Tyr Ser Glu Asp Glu
 165 170 175
 Leu Pro Ala Glu Phe Lys Leu Tyr Leu Pro Val Gln Asn Lys Ala Lys
 180 185 190
 Gln

<210> 4151
 <211> 1372
 <212> DNA
 <213> Homo sapiens

<400> 4151
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 120
 cgcgagcacc ctccccagat gaaaacacca gcaccaggag gtggggccgta gcccaggctg
 180
 agggaggagg ctgggggctg gggctcaggg cccccccgg gccacagcgc caccctgagt
 240
 ggccctgaaa atagtgcaca gtgctgggta ctgccccggc tggaggcacc tagttgttga
 300
 gcattccggc cacaggccac ccgctggccc ttccttggtg tggcacgaga ccacgggcac
 360
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 420
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 480
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 720
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 780
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 900
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 960
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 1080
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 1260
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 1320
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 1372

<210> 4152

<211> 97

<212> PRT

<213> Homo sapiens

<400> 4152

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Cys | Thr | Ala | Ser | Trp | Pro | Gln | Gly | Leu | Leu | Arg | Trp | Trp | Glu |
| 1 | | | | 5 | | | | 10 | | | | 15 | | | |
| Gly | Cys | Pro | Ala | Val | Arg | Lys | Ala | Ser | Ala | Gly | Ala | Ala | Ala | Ala | Val |

```

      20      25      30
Arg Glu Gly Glu Thr Pro Ala Glu Asp Ala Lys Leu Asp Arg Pro Gly
      35      40      45
Ser Glu Pro Ala Ser Val Ala Pro Asn Gln Asn Leu Leu Cys Ala Pro
      50      55      60
Arg Pro Pro Ser Thr Phe Met Ser Val Leu Leu Leu Arg Gly Gln Val
65      70      75      80
Leu Pro Ser Leu Thr Ala Leu Ala Arg Pro Ala Arg Phe Pro Ser Asn
      85      90      95
Pro

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<210> 4153
 <211> 395
 <212> DNA
 <213> Homo sapiens

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<400> 4153
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120
tcattaattc ttccacttta tcatttacat ctaggtcttc ttctgaggct tcaaaactgt
180
atgacctctg acccatgctg tttgcatgga agcgagttgg tgacatcttt ccattggatg
240
tagataatcg ctcatatttc tccctcccat tttgattggt agtgcaaggc tgtggggaag
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tagctgtaga ggaagatgct gggacattgt tagtn
395

```

<210> 4154
 <211> 110
 <212> PRT
 <213> Homo sapiens

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<400> 4154
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Thr Thr Asn Gln Asn Gly Arg Glu Asn Asn Glu Arg Leu Ser Thr Ser
      20      25      30
Asn Gly Lys Met Ser Pro Thr Arg Phe His Ala Asn Ser Met Gly Gln
      35      40      45
Arg Ser Tyr Ser Phe Glu Ala Ser Glu Glu Asp Leu Asp Val Asn Asp
      50      55      60
Lys Val Glu Glu Leu Met Arg Arg Asp Ser Ser Val Ile Lys Glu Glu
65      70      75      80
Ile Lys Ala Phe Leu Ala Asn Arg Arg Ile Ser Gln Ala Val Asp Thr
      85      90      95
Ile Gly Lys Met Leu Phe Pro Ser Val His Ser Gly Leu Ile
      100      105      110

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<210> 4155
<211> 1191
<212> DNA
<213> Homo sapiens

<400> 4155
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120
ttgatggctc caagacgtgc accattgagg acgtgtctcg caaagccacg attgaggagc
180
tgcgcgagcg ggtgtgggcg ctgttcgacg tgcggcccga atgccagcgc ctcttctacc
240
ggggcaagca gttggaaaat ggatatacct tatttgatta tgatgttggg ctgaatgata
300
taattcagct gctagttcgc ccagaccctg atcatcttcc tggcacatct acacagattg
360
aggctaaacc ctgttctaata agtcaccta aagtaaagaa agctccgagg gtaggacctt
420
ccaatcagcc atctacatca gctcgtgccc gtcttattga tcctggcttt ggaatatata
480
agatacccag aaagcggtag tctagaaatg aatgtcaagg atcttagacc acgagctaga
540
accattttga aatggaatga actaaatgtt ggtgatgtgg taatggtaa ttataatgta
600
gaaagtcttg gacaaagagg attctgggtt gatgcagaaa ttaccacatt gaagacaatc
660
tcaaggacca aaaaagaact tcgtgtgaaa attttcctgg ggggttctga aggaacatta
720
aatgactgca agataatatc tgtagatgaa atcttcaaga ttgagagacc tggagcccat
780
cccttttcat ttgcagatgg aaagttttta aggcgaaatg accctgaatg tgacctgtgt
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ggtggagacc cagaaaagaa atgtcattct tgctcctgtc gtgtatgtgg tgggaaacat
900
gaacccaaca tgcagcttct gtgtgatgaa tgtaatgtgg cttatcatat ttactgtctg
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aatccacctt tggataaagt ccagaaagag gaatactggt attgtccttc ttgtaaaact
1020
gattccagtg aagttgtaaa ggctggtgaa agactcaaga tgagtaaaaa gaaagcaaag
1080
atgccgtcag ctagtactga aagccgaaga gactgaggca ggggagggga ggggagggaa
1140
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1191

<210> 4156
<211> 233
<212> PRT
<213> Homo sapiens

<400> 4156
Asp Leu Pro Ile Ser His Leu His Gln Leu Val Pro Val Leu Leu Ile

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Leu Ala Leu Glu Tyr Ile Arg Tyr Pro Glu Ser Gly Thr Leu Glu Met | | | |
| 20 | 25 | 30 | |
| Asn Val Lys Asp Leu Arg Pro Arg Ala Arg Thr Ile Leu Lys Trp Asn | | | |
| 35 | 40 | 45 | |
| Glu Leu Asn Val Gly Asp Val Val Met Val Asn Tyr Asn Val Glu Ser | | | |
| 50 | 55 | 60 | |
| Pro Gly Gln Arg Gly Phe Trp Phe Asp Ala Glu Ile Thr Thr Leu Lys | | | |
| 65 | 70 | 75 | 80 |
| Thr Ile Ser Arg Thr Lys Lys Glu Leu Arg Val Lys Ile Phe Leu Gly | | | |
| 85 | 90 | 95 | |
| Gly Ser Glu Gly Thr Leu Asn Asp Cys Lys Ile Ile Ser Val Asp Glu | | | |
| 100 | 105 | 110 | |
| Ile Phe Lys Ile Glu Arg Pro Gly Ala His Pro Leu Ser Phe Ala Asp | | | |
| 115 | 120 | 125 | |
| Gly Lys Phe Leu Arg Arg Asn Asp Pro Glu Cys Asp Leu Cys Gly Gly | | | |
| 130 | 135 | 140 | |
| Asp Pro Glu Lys Lys Cys His Ser Cys Ser Cys Arg Val Cys Gly Gly | | | |
| 145 | 150 | 155 | 160 |
| Lys His Glu Pro Asn Met Gln Leu Leu Cys Asp Glu Cys Asn Val Ala | | | |
| 165 | 170 | 175 | |
| Tyr His Ile Tyr Cys Leu Asn Pro Pro Leu Asp Lys Val Pro Glu Glu | | | |
| 180 | 185 | 190 | |
| Glu Tyr Trp Tyr Cys Pro Ser Cys Lys Thr Asp Ser Ser Glu Val Val | | | |
| 195 | 200 | 205 | |
| Lys Ala Gly Glu Arg Leu Lys Met Ser Lys Lys Lys Ala Lys Met Pro | | | |
| 210 | 215 | 220 | |
| Ser Ala Ser Thr Glu Ser Arg Arg Asp | | | |
| 225 | 230 | | |

<210> 4157

<211> 3460

<212> DNA

<213> Homo sapiens

<400> 4157

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120
gaggatgagt ttgaggagac actccaggag gcttgaggc acctgggcag atacagggg
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300
attgtaaac cccgtaactc agatggggaa tttctcaaca gactgaaccg cttcttaga
360
gaggagaggc ggaccgtgtc agatatgaac cgagtcctcg ggtcggacac caattgttc
420
gtcccaagag tgactatc accagagttc tggacctggg ccagactct gggggcagca
480
gtgcagcctc tgctagaaca aatgtgttac cgagaactaa gagggttttc tgggaacacc
540

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720
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1320
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2160

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 2760
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<210> 4158

<211> 463

<212> PRT

<213> Homo sapiens

<400> 4158

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Leu | Thr | Leu | Leu | Gln | Asp | Trp | Cys | Arg | Gly | Glu | His | Leu | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Arg | Arg | Cys | Met | Leu | Ile | Leu | Gly | Ile | Pro | Glu | Asp | Cys | Gly | Glu |

20 25 30
 Asp Glu Phe Glu Glu Thr Leu Gln Glu Ala Cys Arg His Leu Gly Arg
 35 40 45
 Tyr Arg Val Ile Gly Arg Met Phe Arg Arg Glu Glu Asn Ala Gln Ala
 50 55 60
 Ile Leu Leu Glu Leu Ala Gln Asp Ile Asp Tyr Ala Leu Leu Pro Arg
 65 70 75 80
 Glu Ile Pro Gly Lys Gly Gly Pro Trp Glu Val Ile Val Lys Pro Arg
 85 90 95
 Asn Ser Asp Gly Glu Phe Leu Asn Arg Leu Asn Arg Phe Leu Glu Glu
 100 105 110
 Glu Arg Arg Thr Val Ser Asp Met Asn Arg Val Leu Gly Ser Asp Thr
 115 120 125
 Asn Cys Ser Ala Pro Arg Val Thr Ile Ser Pro Glu Phe Trp Thr Trp
 130 135 140
 Ala Gln Thr Leu Gly Ala Ala Val Gln Pro Leu Leu Glu Gln Met Leu
 145 150 155 160
 Tyr Arg Glu Leu Arg Val Phe Ser Gly Asn Thr Ile Ser Ile Pro Gly
 165 170 175
 Ala Leu Ala Phe Asp Ala Trp Leu Glu His Thr Thr Glu Met Leu Gln
 180 185 190
 Met Trp Gln Val Pro Glu Gly Glu Lys Arg Arg Arg Leu Met Glu Cys
 195 200 205
 Leu Arg Gly Pro Ala Leu Gln Val Val Ser Gly Leu Arg Ala Ser Asn
 210 215 220
 Ala Ser Ile Thr Val Glu Glu Cys Leu Ala Ala Leu Gln Gln Val Phe
 225 230 235 240
 Gly Pro Val Glu Ser His Lys Ile Ala Gln Val Lys Leu Cys Lys Ala
 245 250 255
 Tyr Gln Glu Ala Gly Glu Lys Val Ser Ser Phe Val Leu Arg Leu Glu
 260 265 270
 Pro Leu Leu Gln Arg Ala Val Glu Asn Asn Val Val Ser Arg Arg Asn
 275 280 285
 Val Asn Gln Thr Arg Leu Lys Arg Val Leu Ser Gly Ala Thr Leu Pro
 290 295 300
 Asp Lys Leu Arg Asp Lys Leu Lys Leu Met Lys Gln Arg Arg Lys Pro
 305 310 315 320
 Pro Gly Phe Leu Ala Leu Val Lys Leu Leu Arg Glu Glu Glu Glu Trp
 325 330 335
 Glu Ala Thr Leu Gly Pro Asp Arg Glu Ser Leu Glu Gly Leu Glu Val
 340 345 350
 Ala Pro Arg Pro Pro Ala Arg Ile Thr Gly Val Gly Ala Val Pro Leu
 355 360 365
 Pro Ala Ser Gly Asn Ser Phe Asp Ala Arg Pro Ser Gln Gly Tyr Arg
 370 375 380
 Arg Arg Arg Gly Arg Gly Gln His Arg Arg Gly Gly Val Ala Arg Ala
 385 390 395 400
 Gly Ser Arg Gly Ser Arg Lys Arg Lys Arg His Thr Phe Cys Tyr Ser
 405 410 415
 Cys Gly Glu Asp Gly His Ile Arg Val Gln Cys Ile Asn Pro Ser Asn
 420 425 430
 Leu Leu Leu Val Lys Gln Lys Lys Gln Ala Ala Val Glu Ser Gly Asn
 435 440 445
 Gly Asn Trp Ala Trp Asp Lys Ser His Pro Lys Ser Lys Ala Lys

450 455 460

<210> 4159
<211> 1491
<212> DNA
<213> Homo sapiens

<400> 4159
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120
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180
tgccctacccc tggttattgc taaaatgggt aactgacaat aaagagatta gaagtgggtt
240
ataggaagcg aggtgggttc tagatgcaaa actaatccc tgtcccatgt gaaattgttt
300
ttgtgatttt gtggcggttg ggatgacaga tgagacttga ggaatgcaaa tgtgctaatt
360
tcccacttga tgtattgga agtgtggagc atgtatacat cacctggta atttcatttg
420
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480
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540
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600
tctattatgt gcaagaagtg tatggagctc atcagccttc ccttggcaaa caagctcacc
660
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720
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780
aaggacgatg accggatccg ctgctgtaca cactgcaagg acacgtgct caagagagag
840
cagcagattg atgagaagga gcacacacct gacatcgtga agctctacga gaaattacga
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1020
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1080
gacctccac cacatccaag caatttgagg ctgcagagaa tgatcagata ctgagctaca
1140
ctttttgtgc aggaaaagtt gcttggtttg atgtcactgc caaccaaaga acagtttgag
1200
gaactgaaaa agaaaaggaa ggaggaaatg gagaggaaga gggccgtgga gagacaagct
1260
gccctggagt ccagcgaag gcttgaggaa aggcagagtg gcctggcttc tcgagcggcc
1320
aacggggagg tggcatctct ccgcaggggc cctgccccct tgaaaaaggc tgagggctgg
1380

ctcccactgt caggaggtca ggggcagagt gaggactcag acccgctcct ccagcagatc
 1440
 cacaacatca catcattcat caggcaggcc aaggccgcgg ggccgcgatgg g
 1491

<210> 4160
 <211> 360
 <212> PRT
 <213> Homo sapiens

<400> 4160
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 Thr Asn Thr Glu Ser Ala Lys Ile Arg Ala Ile Glu Lys Ser Val Val
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 Pro Trp Val Asn Asp Gln Asp Val Pro Phe Cys Pro Asp Cys Gly Asn
 35 40 45
 Lys Phe Ser Ile Arg Asn Arg Arg His His Cys Arg Leu Cys Gly Ser
 50 55 60
 Ile Met Cys Lys Lys Cys Met Glu Leu Ile Ser Leu Pro Leu Ala Asn
 65 70 75 80
 Lys Leu Thr Ser Ala Ser Lys Glu Ser Leu Ser Thr His Thr Ser Pro
 85 90 95
 Ser Gln Ser Pro Asn Ser Val His Gly Ser Arg Arg Gly Ser Ile Ser
 100 105 110
 Ser Met Ser Ser Val Ser Ser Val Leu Asp Glu Lys Asp Asp Asp Arg
 115 120 125
 Ile Arg Cys Cys Thr His Cys Lys Asp Thr Leu Leu Lys Arg Glu Gln
 130 135 140
 Gln Ile Asp Glu Lys Glu His Thr Pro Asp Ile Val Lys Leu Tyr Glu
 145 150 155 160
 Lys Leu Arg Leu Cys Met Glu Lys Val Asp Gln Lys Ala Pro Glu Tyr
 165 170 175
 Ile Arg Met Ala Ala Ser Leu Asn Ala Gly Glu Thr Thr Tyr Ser Leu
 180 185 190
 Glu His Ala Ser Asp Leu Arg Val Glu Val Gln Lys Val Tyr Glu Leu
 195 200 205
 Ile Asp Ala Leu Ser Lys Lys Ile Leu Thr Leu Gly Leu Asn Gln Asp
 210 215 220
 Pro Pro Pro His Pro Ser Asn Leu Arg Leu Gln Arg Met Ile Arg Tyr
 225 230 235 240
 Ser Ala Thr Leu Phe Val Gln Glu Lys Leu Leu Gly Leu Met Ser Leu
 245 250 255
 Pro Thr Lys Glu Gln Phe Glu Glu Leu Lys Lys Lys Arg Lys Glu Glu
 260 265 270
 Met Glu Arg Lys Arg Ala Val Glu Arg Gln Ala Ala Leu Glu Ser Gln
 275 280 285
 Arg Arg Leu Glu Glu Arg Gln Ser Gly Leu Ala Ser Arg Ala Ala Asn
 290 295 300
 Gly Glu Val Ala Ser Leu Arg Arg Gly Pro Ala Pro Leu Lys Lys Ala
 305 310 315 320
 Glu Gly Trp Leu Pro Leu Ser Gly Gly Gln Gly Gln Ser Glu Asp Ser
 325 330 335
 Asp Pro Leu Leu Gln Gln Ile His Asn Ile Thr Ser Phe Ile Arg Gln

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<210> 4161
<211> 3316
<212> DNA
<213> Homo sapiens
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3347

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1440
agttgggtgt gtgattctca agatgactgt ggtgatggca gcgatgaaga aaattgcccc
1500
gtaatcgctc ctacaagagt catcactgct gccgtcatag ggagcctcat ctgtggcctg
1560
ttactcgctc tagcattggg atgtacttgt aagctttatt ctctgagaat gtttgaaaga
1620
agatcatttg aaacacagtt gtcaagagtg gaagcagaat tgttaagaag agaagctcct
1680
ccctcgatg gacaattgat tgctcagggg ttaattccac cagttgaaga ttttcctggt
1740
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1800
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1860
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1920
gaggttgtcc ctagtcagag taccagtaga gaacctgaga gaaatcatac tcacagaagt
1980
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2040
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2100
gcgacagtag gagcatgtgc aagttcctca actcagagta cccgaggtagg tcatgcagat
2160
aatggaaggg atgtgacaag tgtggaaccc ocaagtgtga gtccagcacg tcaccagctt
2220
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2280
tcaagttccc taagtcagaa ccagagtcct ttgagacaac ttgataatgg ggtaagtgga
2340
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2400
gatgtgaatg actgtccag acctcttctt gatcttgcct cagatcaagg acaagggtt
2460
agacaacat ataatgcaac aaatcctgga gtaaggcaa gtaatcgaga tggccccgt
2520
gagcgctgtg gtattgtcca cactgcccag ataccagaca cttgcttaga agtaacactg
2580
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2640
agattgtata caagttggag caatatccgt ttattatttt gtaactttac agttaaacta
2700
gttttagttt aaaaagaaaa aatgcagggt gatttcttat tattatatgt tagcctgcac
2760
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2820
atgcatcaca tattgcatat tgttcaataa tggctccttc atttgtttct gattgttttc
2880
atcctgatac tgtagttcac tgtagaaatg tggctgctga aactcatttg attgtcattt
2940

ttatctatcc tatgttaaatt gggttggttt tacaaaataa taccttattt taattgaaac
 3000
 gtttatgctt ttgccaagca catcttgtaa cttaatatag ctagatgtta aggttggttaa
 3060
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 3120
 ttattggata tcattatcat atgaacttgt cagtgggaaa caaactgtct aaaaatttat
 3180
 ctcttacgtt taacatacaa tcatgtgaga tttaggcaga gttcgataaa ttactggcaa
 3240
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 3300
 accanatggt aaaatc
 3316

<210> 4162

<211> 859

<212> PRT

<213> Homo sapiens

<400> 4162

Met Ala Cys Arg Trp Ser Thr Lys Glu Ser Pro Arg Trp Arg Ser Ala
 1 5 10 15
 Leu Leu Leu Leu Phe Leu Ala Gly Val Tyr Gly Asn Gly Ala Leu Ala
 20 25 30
 Glu His Ser Glu Asn Val His Ile Ser Gly Val Ser Thr Ala Cys Gly
 35 40 45
 Glu Thr Pro Glu Gln Ile Arg Ala Pro Ser Gly Ile Ile Thr Ser Pro
 50 55 60
 Gly Trp Pro Ser Glu Tyr Pro Ala Lys Ile Asn Cys Ser Trp Phe Ile
 65 70 75 80
 Arg Ala Asn Pro Gly Glu Ile Ile Thr Ile Ser Phe Gln Asp Phe Asp
 85 90 95
 Ile Gln Gly Ser Arg Arg Cys Asn Leu Asp Trp Leu Thr Ile Glu Thr
 100 105 110
 Tyr Lys Asn Ile Glu Ser Tyr Arg Ala Cys Gly Ser Thr Ile Pro Pro
 115 120 125
 Pro Tyr Ile Ser Ser Gln Asp His Ile Trp Ile Arg Phe His Ser Asp
 130 135 140
 Asp Asn Ile Ser Arg Lys Gly Phe Arg Leu Ala Tyr Phe Ser Gly Lys
 145 150 155 160
 Ser Glu Glu Pro Asn Cys Ala Cys Asp Gln Phe Arg Cys Gly Asn Gly
 165 170 175
 Lys Cys Ile Pro Glu Ala Trp Lys Cys Asn Asn Met Asp Glu Cys Gly
 180 185 190
 Asp Ser Ser Asp Glu Glu Ile Cys Ala Lys Glu Ala Asn Pro Pro Thr
 195 200 205
 Ala Ala Ala Phe Gln Pro Cys Ala Tyr Asn Gln Phe Gln Cys Leu Ser
 210 215 220
 Arg Phe Thr Lys Val Tyr Thr Cys Leu Pro Glu Ser Leu Lys Cys Asp
 225 230 235 240
 Gly Asn Ile Asp Cys Leu Asp Leu Gly Asp Glu Ile Asp Cys Asp Val
 245 250 255
 Pro Thr Cys Gly Gln Trp Leu Lys Tyr Phe Tyr Gly Thr Phe Asn Ser

260 265 270
 Pro Asn Tyr Pro Asp Phe Tyr Pro Pro Gly Ser Asn Cys Thr Trp Leu
 275 280 285
 Ile Asp Thr Gly Asp His Arg Lys Val Ile Leu Arg Phe Thr Asp Phe
 290 295 300
 Lys Leu Asp Gly Thr Gly Tyr Gly Asp Tyr Val Lys Ile Tyr Asp Gly
 305 310 315 320
 Leu Glu Glu Asn Pro His Lys Leu Leu Arg Val Leu Thr Ala Phe Asp
 325 330 335
 Ser His Ala Pro Leu Thr Val Val Ser Ser Ser Gly Gln Ile Arg Val
 340 345 350
 His Phe Cys Ala Asp Lys Val Asn Ala Ala Arg Gly Phe Asn Ala Thr
 355 360 365
 Tyr Gln Val Asp Gly Phe Cys Leu Pro Trp Glu Ile Pro Cys Gly Gly
 370 375 380
 Asn Trp Gly Cys Tyr Thr Glu Gln Gln Arg Cys Asp Gly Tyr Trp His
 385 390 395 400
 Cys Pro Asn Gly Arg Asp Glu Thr Asn Cys Thr Met Cys Gln Lys Glu
 405 410 415
 Glu Phe Pro Cys Ser Arg Asn Gly Val Cys Tyr Pro Arg Ser Asp Arg
 420 425 430
 Cys Asn Tyr Gln Asn His Cys Pro Asn Gly Ser Asp Glu Lys Asn Cys
 435 440 445
 Phe Phe Cys Gln Pro Gly Asn Phe His Cys Lys Asn Asn Arg Cys Val
 450 455 460
 Phe Glu Ser Trp Val Cys Asp Ser Gln Asp Asp Cys Gly Asp Gly Ser
 465 470 475 480
 Asp Glu Glu Asn Cys Pro Val Ile Val Pro Thr Arg Val Ile Thr Ala
 485 490 495
 Ala Val Ile Gly Ser Leu Ile Cys Gly Leu Leu Leu Val Ile Ala Leu
 500 505 510
 Gly Cys Thr Cys Lys Leu Tyr Ser Leu Arg Met Phe Glu Arg Arg Ser
 515 520 525
 Phe Glu Thr Gln Leu Ser Arg Val Glu Ala Glu Leu Leu Arg Arg Glu
 530 535 540
 Ala Pro Pro Ser Tyr Gly Gln Leu Ile Ala Gln Gly Leu Ile Pro Pro
 545 550 555 560
 Val Glu Asp Phe Pro Val Cys Ser Pro Asn Gln Ala Ser Val Leu Glu
 565 570 575
 Asn Leu Arg Leu Ala Val Arg Ser Gln Leu Gly Phe Thr Ser Val Arg
 580 585 590
 Leu Pro Met Ala Gly Arg Ser Ser Asn Ile Trp Asn Arg Ile Phe Asn
 595 600 605
 Phe Ala Arg Ser Arg His Ser Gly Ser Leu Ala Leu Val Ser Ala Asp
 610 615 620
 Gly Asp Glu Val Val Pro Ser Gln Ser Thr Ser Arg Glu Pro Glu Arg
 625 630 635 640
 Asn His Thr His Arg Ser Leu Phe Ser Val Glu Ser Asp Asp Thr Asp
 645 650 655
 Thr Glu Asn Glu Arg Arg Asp Met Ala Gly Ala Ser Gly Gly Val Ala
 660 665 670
 Ala Pro Leu Pro Gln Lys Val Pro Pro Thr Thr Ala Val Glu Ala Thr
 675 680 685
 Val Gly Ala Cys Ala Ser Ser Ser Thr Gln Ser Thr Arg Gly Gly His


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        690                695                700
Ala Asp Asn Gly Arg Asp Val Thr Ser Val Glu Pro Pro Ser Val Ser
705                710                715                720
Pro Ala Arg His Gln Leu Thr Ser Ala Leu Ser Arg Met Thr Gln Gly
        725                730                735
Leu Arg Trp Val Arg Phe Thr Leu Gly Arg Ser Ser Ser Leu Ser Gln
        740                745                750
Asn Gln Ser Pro Leu Arg Gln Leu Asp Asn Gly Val Ser Gly Arg Glu
        755                760                765
Asp Asp Asp Asp Val Glu Met Leu Ile Pro Ile Ser Asp Gly Ser Ser
        770                775                780
Asp Phe Asp Val Asn Asp Cys Ser Arg Pro Leu Asp Leu Ala Ser
785                790                795                800
Asp Gln Gly Gln Gly Leu Arg Gln Pro Tyr Asn Ala Thr Asn Pro Gly
        805                810                815
Val Arg Pro Ser Asn Arg Asp Gly Pro Cys Glu Arg Cys Gly Ile Val
        820                825                830
His Thr Ala Gln Ile Pro Asp Thr Cys Leu Glu Val Thr Leu Lys Asn
        835                840                845
Glu Thr Ser Asp Asp Glu Ala Leu Leu Leu Cys
        850                855

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<210> 4163
 <211> 568
 <212> DNA
 <213> Homo sapiens

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<400> 4163
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120
gcaggcagcc ggccccctct cccctccctt tcccgcctgc gctctgaagg ctccaagtca
180
gtgttgcccc agtggctctg ggggatgaag gggatcccgg tcccatctgg acaccctcaa
240
gctgatggac gcagagctct ggtgcgggca gtgggtcacc cccaggacct gctgaccgaa
300
gcctctcccc gctgccccgc aggcccttca ccgctgagat ctaccggcag aaagcctcgg
360
ggccccccaa gaggaggtga tttagctgcc ccagttttgt ttaaggcctg ggccacctcc
420
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540
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568

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<210> 4164
 <211> 187
 <212> PRT
 <213> Homo sapiens

<400> 4164

Asn Leu Ser Leu Trp Pro Gly Gln Ala Gln Asp Arg Leu Pro Ser Ala
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 Arg Pro Thr Pro Gly Leu Pro Gly Gln Ser Gly His Gly Ser Leu Gln
 20 25 30
 Cys Gly Leu Gln Asp Pro Ala Gly Ser Arg Pro Leu Ser Pro Pro Phe
 35 40 45
 Ser Arg Leu Arg Ser Glu Gly Ser Lys Ser Val Leu Pro Gln Trp Leu
 50 55 60
 Trp Gly Met Lys Gly Ile Pro Val Pro Ser Gly His Pro Gln Ala Asp
 65 70 75 80
 Gly Arg Arg Ala Leu Val Arg Ala Val Gly His Pro Gln Asp Leu Leu
 85 90 95
 Thr Glu Ala Ser Pro Arg Cys Pro Ala Gly Pro Ser Pro Leu Arg Ser
 100 105 110
 Thr Gly Arg Lys Pro Pro Gly Pro Pro Arg Gly Gly Asp Leu Ala Ala
 115 120 125
 Pro Val Leu Phe Lys Ala Trp Ala Thr Ser Leu Ala Cys Pro Lys Trp
 130 135 140
 Gln Ala Leu Arg Arg Ala Arg Met Val Pro Val Val Gln Gly Ser Pro
 145 150 155 160
 Pro Ala Trp Ala Ala Pro Val Pro Trp Asn Leu Leu Pro Trp Gly Pro
 165 170 175
 Trp Thr Cys Arg His Met Ala Ile Glu Leu Gln
 180 185

<210> 4165

<211> 717

<212> DNA

<213> Homo sapiens

<400> 4165

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 120
 ctgctggact gcgccaggcg tatcctggag agggaggggc cccgtgcctt ctaccgcggc
 180
 tacctcccca acgtgctggg catcatcccc tatgcgggca tcgacctggc cgtctacgag
 240
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 300
 gtgctcctgg cctgcggtac catatccagc acctgcggcc agatagccag ttaccgctg
 360
 gccctggtcc ggaccgcgat gcaggcaciaa ggatttcata atgttgccca ggctcatctc
 420
 gaactcgtgg ggtcaaggaa ttcgccagcc ttcagcctcc caactgctg ggattacagg
 480
 aagccggtgg tcatgccatg agcagcctta tggagaggac catgtggtaa ggaactcagg
 540
 caatagccat gtaactgagc ttggaagagg atcttgctgt cctggccaac atctcactgc
 600
 aattctatca gttgaattcc ctggatagtc caagctttgt ggatccctcc accagaacaa
 660

ctggatccca gtacctgaat cctgaatctt agactcttat acttcaaaca ctgatca
717

<210> 4166
<211> 166
<212> PRT
<213> Homo sapiens

<400> 4166
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Gln Thr Ile Ile Tyr Pro Met Glu Val Leu Lys Thr Arg Leu Thr Leu
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Arg Arg Thr Gly Gln Tyr Lys Gly Leu Leu Asp Cys Ala Arg Arg Ile
35 40 45
Leu Glu Arg Glu Gly Pro Arg Ala Phe Tyr Arg Gly Tyr Leu Pro Asn
50 55 60
Val Leu Gly Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu
65 70 75 80
Thr Leu Lys Asn Trp Trp Leu Gln Gln Tyr Ser His Asp Ser Ala Asp
85 90 95
Pro Gly Ile Leu Val Leu Leu Ala Cys Gly Thr Ile Ser Ser Thr Cys
100 105 110
Gly Gln Ile Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met Gln
115 120 125
Ala Gln Gly Phe His His Val Ala Gln Ala His Leu Glu Leu Val Gly
130 135 140
Ser Arg Asn Ser Pro Ala Phe Ser Leu Pro Thr Cys Trp Asp Tyr Arg
145 150 155 160
Lys Pro Val Val Met Pro
165

<210> 4167
<211> 897
<212> DNA
<213> Homo sapiens

<400> 4167
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cgagaacgtg cggaagaga agatcatcga gcatttcaaa cggtggtgt gcaatggcgt
120
gatctcagcc caccgcaact tccgcctcct gggatcaagc aatcctcctg cttcagcctc
180
ctgagtagct tggactacag atatggccgc gtggaaagtg tcaaaattct tcccaagagg
240
ggatctgaag gaggagtggc tgcctttgtg gattttgtgg acatcaaaag tgcacagaaa
300
gctcacaact cggtcaacaa aatgggtgac agagacctac gcacggatta taatgaacca
360
ggcaccatcc cgagtgtgc tcggggattg gatgatacag tttccatagc atctcgtagt
420
agagaggttt ctgggttcag aggaggtggt ggagggcctg cttatgggtcc cccaccgtca
480

cttcatgcac gagaaggacg ttatgagcgg agacttgatg gggcttcaga taacagggag
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 600
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 660
 ctctattacg cttctcggag tcgaagtcca aatcgctttg atgctcatga cccccgatat
 720
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 780
 gatgatatta cccgggaggt acgaggcaga aggccagagc ggaattacca gcacagcagg
 840
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 897

<210> 4168

<211> 299

<212> PRT

<213> Homo sapiens

<400> 4168

| | | | | | | | | | | | | | | |
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| Xaa | Arg | His | Ala | Gln | His | Gly | Pro | Gly | Asn | Gln | Ala | Ser | Leu | Gly |
| 1 | | | 5 | | | | 10 | | | | | 15 | | |
| Gly | Gln | Phe | Thr | Arg | Glu | Arg | Ala | Gly | Arg | Glu | Asp | His | Arg | Ala |
| | | | 20 | | | | 25 | | | | | 30 | | Phe |
| Gln | Thr | Ala | Gly | Val | Gln | Trp | Arg | Asp | Leu | Ser | Pro | Pro | Gln | Leu |
| | | 35 | | | | 40 | | | | | 45 | | | Pro |
| Pro | Pro | Gly | Ile | Lys | Gln | Ser | Ser | Cys | Phe | Ser | Leu | Leu | Ser | Ser |
| | 50 | | | | 55 | | | | 60 | | | | | Leu |
| Asp | Tyr | Arg | Tyr | Gly | Arg | Val | Glu | Ser | Val | Lys | Ile | Leu | Pro | Lys |
| 65 | | | | | 70 | | | | 75 | | | 80 | | Arg |
| Gly | Ser | Glu | Gly | Gly | Val | Ala | Ala | Phe | Val | Asp | Phe | Val | Asp | Ile |
| | | | 85 | | | | | 90 | | | | 95 | | Lys |
| Ser | Ala | Gln | Lys | Ala | His | Asn | Ser | Val | Asn | Lys | Met | Gly | Asp | Arg |
| | | 100 | | | | | 105 | | | | | 110 | | Asp |
| Leu | Arg | Thr | Asp | Tyr | Asn | Glu | Pro | Gly | Thr | Ile | Pro | Ser | Ala | Ala |
| | | 115 | | | | 120 | | | | | | 125 | | Arg |
| Gly | Leu | Asp | Asp | Thr | Val | Ser | Ile | Ala | Ser | Arg | Ser | Arg | Glu | Val |
| | 130 | | | | | 135 | | | | | 140 | | | Ser |
| Gly | Phe | Arg | Gly | Gly | Gly | Gly | Gly | Pro | Ala | Tyr | Gly | Pro | Pro | Pro |
| 145 | | | | | 150 | | | | 155 | | | | | 160 |
| Leu | His | Ala | Arg | Glu | Gly | Arg | Tyr | Glu | Arg | Arg | Leu | Asp | Gly | Ala |
| | | | 165 | | | | | 170 | | | | 175 | | Ser |
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| | | | | | |
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 50 55 60
 Leu Gly Ala Leu Glu Pro Leu Pro Pro Ala Pro Gly Asp Thr Gly Val
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 Gly Pro Pro Asn Ser Glu Gly Lys Asp Pro Ala Gly Ala Tyr Arg Ser
 85 90 95
 Pro Ser Pro Gln Gly Thr Lys Ala Pro Arg Phe Val Pro Leu Thr Ser
 100 105 110
 Ile Cys Phe Pro Asp Ser Leu Leu Gln Asp Glu Glu Arg Ser Phe Phe
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 Pro Thr Met Glu Glu Met Phe Gly Gly Gly Ala Ala Asp Asp Tyr Gly
 130 135 140
 Lys Ala Gly Pro Pro Glu Asp Glu Gly Asp Pro Lys Ala Gly Ala Gly
 145 150 155 160
 Pro Pro Pro Gly Pro Pro Ala Tyr Asp Pro Tyr Gly Pro Tyr Cys Pro
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 Gly Arg Ala Ser Gly Ala Gly Pro Glu Thr Pro Gly Leu Gly Leu Asp
 180 185 190
 Pro Asn Lys Pro Pro Glu Leu Pro Ser Thr Val Asn Ala Glu Pro Leu
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 Gly Leu Ile Gln Ser Gly Pro His Gln Ala Ala Pro Pro Pro Pro
 210 215 220
 Pro Pro Pro Pro Pro Pro Ala Pro Ala Ser Glu Pro Lys Gly Gly Leu
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 Thr Ser Pro Ile Phe Cys Ser Thr Lys Pro Lys Lys Leu Leu Lys Thr
 245 250 255
 Ser Ser Phe His Leu Leu Arg Arg Arg Asp Pro Pro Phe Gln Thr Pro
 260 265 270
 Lys Lys Leu Tyr Ala Gln Glu Tyr Glu Phe Glu Ala Asp Glu Asp Lys
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 Ala Asp Val Pro Ala Asp Ile Arg Leu Asn Pro Arg Arg Leu Pro Asp

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 325 330 335
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 Gly Arg Pro Arg Ile Arg Pro Leu Glu Val Pro Thr Thr Ala Gly Pro
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 Glu Gly Leu Gly Thr Ser Ser Gly Asp Ala Ile Ser Gly Thr Asp His
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 Gln Ala Gly Leu Thr Pro Pro Leu Ser Pro Pro Lys Ser Val Pro Pro
 485 490 495
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 Val Pro His Pro Pro Pro Ser Gly Ala Phe Gly Leu Gly Gly Ala Leu
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 Lys Arg Leu Asp Glu Glu Leu Lys Arg Asn Leu Glu Thr Leu Pro Ser
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 Phe Ser Ser Asp Glu Glu Asp Ser Val Ala Lys Asn Arg Asp Leu Gln
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 Glu Ser Ile Ser Ser Ala Ile Ser Ala Leu Asp Asp Pro Pro Leu Ala
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 Gly Pro Lys Asp Thr Ser Thr Pro Asp Gly Pro Pro Leu Ala Pro Ala
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 Trp Arg Val Gln Lys Ala Leu Leu Gln Lys Phe Thr Pro Glu Ile Lys
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<213> Homo sapiens

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| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Ala | Leu | Phe | Leu | Leu | His | Arg | Tyr | Gly | Asp | Phe | Lys | Lys | Gln | His | Arg |
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| Leu | Val | Ile | Ile | Gly | Thr | Leu | Leu | Ala | Trp | Tyr | Leu | Cys | Phe | Leu | Ile |
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| Val | Phe | Ile | Leu | Pro | Leu | Asp | Val | Ser | Thr | Thr | Ile | Tyr | Asn | Arg | Cys |
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| Lys | His | Ala | Ala | Gln | Ile | Gln | Ala | Leu | Leu | Arg | Ile | Ala | Thr | Leu | Gln |
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| | | 85 | | | | | 90 | | | | | 95 | | | |
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| | 100 | | | | | | 105 | | | | | 110 | | | |
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| Phe | Gly | Ala | Phe | Leu | Ile | Tyr | Val | Ala | Val | Asn | Pro | His | Leu | His | Leu |
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<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

<400> 4177

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| Tyr | Lys | Val | Asn | Gly | Ile | Leu | Thr | Leu | Ala | Thr | Phe | Leu | Ser | Cys | Arg |

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 Leu Ser Leu Leu Gln Val Pro Phe Ser Ile Pro Phe Tyr Cys Asn Val
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<400> 4182
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<211> 374

<212> PRT

<213> Homo sapiens

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Ser | Ser | Pro | Ala | Ser | Ser | Asn | Tyr | Gln | Gln | Thr | Thr | Ile | Ser | 1 | 5 | 10 | 15 |
| His | Ser | Pro | Ser | Ser | Arg | Phe | Val | Pro | Pro | Gln | Thr | Ser | Ser | Gly | Asn | 20 | 25 | 30 | |
| Arg | Phe | Met | Pro | Gln | Gln | Asn | Ser | Pro | Val | Pro | Ser | Pro | Tyr | Ala | Pro | 35 | 40 | 45 | |
| Gln | Ser | Pro | Ala | Gly | Tyr | Met | Pro | Tyr | Ser | His | Pro | Ser | Ser | Tyr | Thr | 50 | 55 | 60 | |
| Thr | His | Pro | Gln | Met | Gln | Gln | Ala | Ser | Val | Ser | Ser | Pro | Ile | Val | Ala | 65 | 70 | 75 | 80 |
| Gly | Gly | Leu | Arg | Asn | Ile | His | Asp | Asn | Lys | Val | Ser | Gly | Pro | Leu | Ser | 85 | 90 | 95 | |
| Gly | Asn | Ser | Ala | Asn | His | His | Ala | Asp | Asn | Pro | Arg | His | Gly | Ser | Ser | 100 | 105 | 110 | |
| Glu | Asp | Tyr | Leu | His | Met | Val | His | Arg | Leu | Ser | Ser | Asp | Asp | Gly | Asp | 115 | 120 | 125 | |
| Ser | Ser | Thr | Met | Arg | Asn | Ala | Ala | Ser | Phe | Pro | Leu | Arg | Ser | Pro | Gln | 130 | 135 | 140 | |
| Pro | Val | Cys | Ser | Pro | Ala | Gly | Ser | Glu | Gly | Thr | Pro | Lys | Gly | Ser | Arg | 145 | 150 | 155 | 160 |
| Pro | Pro | Leu | Ile | Leu | Gln | Ser | Gln | Ser | Leu | Pro | Cys | Ser | Ser | Pro | Arg | 165 | 170 | 175 | |
| Asp | Val | Pro | Pro | Asp | Ile | Leu | Leu | Asp | Ser | Pro | Glu | Arg | Lys | Gln | Lys | 180 | 185 | 190 | |
| Lys | Gln | Lys | Lys | Met | Lys | Leu | Gly | Lys | Asp | Glu | Lys | Glu | Gln | Ser | Glu | 195 | 200 | 205 | |
| Lys | Ala | Ala | Met | Tyr | Asp | Ile | Ile | Ser | Ser | Pro | Ser | Lys | Asp | Ser | Thr | 210 | 215 | 220 | |
| Lys | Leu | Thr | Leu | Arg | Leu | Ser | Arg | Val | Arg | Ser | Ser | Asp | Met | Asp | Gln | 225 | 230 | 235 | 240 |
| Gln | Glu | Asp | Met | Leu | Ser | Gly | Met | Glu | Asn | Ser | Asn | Val | Ser | Glu | Asn | 245 | 250 | 255 | |
| Asp | Ile | Pro | Phe | Asn | Val | Gln | Tyr | Gln | Gly | Gln | Thr | Ser | Lys | Thr | Pro | 260 | 265 | 270 | |
| Ile | Thr | Pro | Gln | Asp | Val | Asn | Arg | Pro | Leu | Asn | Ala | Ala | Gln | Cys | Leu | | | | |

| | | |
|-------------------------|---------------------|---------------------|
| 275 | 280 | 285 |
| Ser Gln Gln Glu Gln Thr | Ala Phe Leu Pro Ala | Asn Gln Val Pro Val |
| 290 | 295 | 300 |
| Leu Gln Gln Asn Thr Ser | Val Ala Thr Lys Gln | Pro Gln Thr Ser Val |
| 305 | 310 | 315 |
| Val Gln Asn Gln Gln Gln | Ile Ser Gln Gln Gly | Pro Ile Tyr Asp Glu |
| 325 | 330 | 335 |
| Val Glu Leu Asp Ala Leu | Ala Glu Ile Glu Arg | Ile Glu Arg Glu Ser |
| 340 | 345 | 350 |
| Ala Ile Glu Arg Glu Arg | Phe Ser Lys Glu Val | Gln Asp Lys Asp Lys |
| 355 | 360 | 365 |
| Pro Leu Lys Lys Lys Lys | | |
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<211> 1481

<212> DNA

<213> Homo sapiens

<400> 4185

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<211> 385

<212> PRT

<213> Homo sapiens

<400> 4186

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| Xaa | Val | Phe | Lys | Ser | Leu | Asp | Lys | Lys | Asn | Asp | Gly | Arg | Ile | Asp | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gln | Glu | Ile | Met | Gln | Ser | Leu | Arg | Asp | Leu | Gly | Val | Lys | Ile | Ser | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gln | Gln | Ala | Glu | Lys | Ile | Leu | Lys | Ser | Met | Asp | Lys | Asn | Gly | Thr | Met |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Thr | Ile | Asp | Trp | Asn | Glu | Trp | Arg | Asp | Tyr | His | Leu | Leu | His | Pro | Val |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Glu | Asn | Ile | Pro | Glu | Ile | Ile | Leu | Tyr | Trp | Lys | His | Ser | Thr | Ile | Phe |
| 65 | | | | 70 | | | | 75 | | | | | 80 | | |
| Asp | Val | Gly | Glu | Asn | Leu | Thr | Val | Pro | Asp | Glu | Phe | Thr | Val | Glu | Glu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Arg | Gln | Thr | Gly | Met | Trp | Trp | Arg | His | Leu | Val | Ala | Gly | Gly | Gly | Ala |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Gly | Ala | Val | Ser | Arg | Thr | Cys | Thr | Ala | Pro | Leu | Asp | Arg | Leu | Lys | Val |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Leu | Met | Gln | Val | His | Ala | Ser | Arg | Ser | Asn | Asn | Met | Gly | Ile | Val | Gly |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Gly | Phe | Thr | Gln | Met | Ile | Arg | Glu | Gly | Gly | Ala | Arg | Ser | Leu | Trp | Arg |
| 145 | | | | 150 | | | | 155 | | | | | 160 | | |
| Gly | Asn | Gly | Ile | Asn | Val | Leu | Lys | Ile | Ala | Pro | Glu | Ser | Ala | Ile | Lys |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Phe | Met | Ala | Tyr | Glu | Gln | Ile | Lys | Arg | Leu | Val | Gly | Ser | Asp | Gln | Glu |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Thr | Leu | Arg | Ile | His | Glu | Arg | Leu | Val | Ala | Gly | Ser | Leu | Ala | Gly | Ala |
| | | 195 | | | | | 200 | | | | | | 205 | | |
| Ile | Ala | Gln | Ser | Ser | Ile | Tyr | Pro | Met | Glu | Val | Leu | Lys | Thr | Arg | Met |
| | 210 | | | | | 215 | | | | | | 220 | | | |
| Ala | Leu | Arg | Lys | Thr | Gly | Gln | Tyr | Ser | Gly | Met | Leu | Asp | Cys | Ala | Arg |
| 225 | | | | 230 | | | | 235 | | | | | 240 | | |
| Arg | Ile | Leu | Ala | Arg | Glu | Gly | Val | Ala | Ala | Phe | Tyr | Lys | Gly | Tyr | Val |

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 275 280 285
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 Thr Cys Gly Gln Leu Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg
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 Met Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser
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<211> 1087

<212> DNA

<213> Homo sapiens

<400> 4187

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<211> 272

<212> PRT

<213> Homo sapiens

<400> 4188

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| Xaa | Ala | Ile | Asp | Arg | Ala | Cys | Pro | Glu | Ser | Ala | Ser | Leu | Leu | Gly | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Arg | Val | Leu | Ala | Asp | Ser | Phe | Pro | Asp | Ser | Ser | Pro | Tyr | Glu | Gly |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Tyr | Asn | Tyr | Gly | Ser | Phe | Glu | Asn | Val | Ser | Gly | Ser | Thr | Asp | Gly | Leu |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Val | Asp | Ser | Ala | Gly | Thr | Gly | Asp | Leu | Ser | Tyr | Gly | Tyr | Gln | Gly | Arg |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ser | Phe | Glu | Pro | Val | Gly | Thr | Arg | Pro | Arg | Val | Asp | Ser | Met | Ser | Ser |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Val | Glu | Glu | Asp | Asp | Tyr | Asp | Thr | Leu | Thr | Asp | Ile | Asp | Ser | Asp | Lys |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Asn | Val | Ile | Arg | Thr | Lys | Gln | Tyr | Leu | Tyr | Val | Ala | Asp | Leu | Ala | Arg |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Lys | Asp | Lys | Arg | Val | Leu | Arg | Lys | Tyr | Gln | Ile | Tyr | Phe | Trp | Asn | |
| | 115 | | | | | 120 | | | | | | 125 | | | |
| Ile | Ala | Thr | Ile | Ala | Val | Phe | Tyr | Ala | Leu | Pro | Val | Val | Gln | Leu | Val |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ile | Thr | Tyr | Pro | Glu | Xaa | Gly | Gly | Cys | Thr | Arg | Gly | Ser | Arg | Asp | Ile |
| 145 | | | | 150 | | | | 155 | | | | | | 160 | |
| Cys | Ser | Ser | Asn | Phe | Leu | Cys | Ala | His | Pro | Leu | Gly | Asn | Leu | Ser | Ala |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Phe | Asn | Asn | Ile | Leu | Ser | Asn | Leu | Gly | Tyr | Ile | Leu | Leu | Gly | Leu | Leu |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Phe | Leu | Leu | Ile | Ile | Leu | Gln | Arg | Glu | Ile | Asn | His | Asn | Arg | Ala | Leu |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Leu | Arg | Asn | Asp | Leu | Cys | Ala | Leu | Glu | Cys | Gly | Ile | Pro | Lys | His | Phe |
| | 210 | | | | 215 | | | | | | 220 | | | | |
| Gly | Leu | Phe | Tyr | Ala | Met | Gly | Thr | Ala | Leu | Met | Met | Glu | Gly | Leu | Leu |
| 225 | | | | 230 | | | | 235 | | | | | | 240 | |
| Ser | Ala | Cys | Tyr | His | Val | Cys | Pro | Asn | Tyr | Thr | Asn | Phe | Gln | Phe | Gly |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Glu | Trp | Gly | Val | Leu | Leu | Phe | Trp | Leu | Asn | Leu | Gln | Gln | Gly | Pro | Ala |
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<211> 1570

<212> DNA

<213> Homo sapiens

<400> 4189

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<210> 4190

<211> 523

<212> PRT

<213> Homo sapiens

<400> 4190

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | Ser | Thr | Ile | Tyr | Pro | Ser | Pro | Glu | Glu | Leu | Glu | Ala | Val | Gln | Asn |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Met | Val | Ser | Thr | Val | Glu | Cys | Ala | Leu | Lys | His | Val | Ser | Asp | Trp | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Glu | Thr | Asn | Lys | Gly | Thr | Lys | Thr | Glu | Gly | Glu | Thr | Glu | Val | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Asp | Glu | Ala | Gly | Glu | Asn | Tyr | Ser | Lys | Asp | Gln | Gly | Gly | Arg | Thr |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Leu | Cys | Gly | Val | Met | Arg | Ile | Gly | Leu | Val | Ala | Lys | Gly | Leu | Leu | Ile |
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| Lys | Asp | Asp | Met | Asp | Leu | Glu | Leu | Val | Leu | Met | Cys | Lys | Asp | Lys | Pro |
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<212> DNA

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 Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His
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 Met Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly
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<213> Homo sapiens

<400> 4195

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<212> PRT

<213> Homo sapiens

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| 1 | | | | 5 | | | | | 10 | | | | 15 | | |
| His | Arg | Arg | Cys | Ser | Trp | Ser | Leu | Leu | Pro | Ala | Met | Gly | Leu | Cys | Thr |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Ala | Thr | Leu | Ala | Leu | Ile | Leu | Leu | Val | Leu | Leu | Glu | Ala | Leu | Ala |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Gln | Ala | Asp | Thr | Gln | Lys | Met | Val | Glu | Ala | Gln | Arg | Gly | Val | Gly | Pro |
| | | | 50 | | | 55 | | | | | 60 | | | | |
| Arg | Ala | Cys | Tyr | Ser | Ile | Trp | Leu | Leu | Leu | Ala | Pro | Thr | Pro | Pro | Leu |
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| Ser | His | Cys | Leu | Gln | Ser | Pro | Gln | Lys | Gln | His | Gln | Val | Cys | Gly | Asp |
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| Ala | Trp | Ala | Arg | Tyr | Ser | His | Arg | Met | Asp | Ser | Leu | Gln | Lys | Gln | Asp |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Leu | Arg | Arg | Pro | Lys | Ile | His | Gly | Ala | Val | Gln | Ala | Ser | Pro | Tyr | Gln |
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| | | | 180 | | | | 185 | | | | | | 190 | | |
| Thr | His | Val | Val | Asn | Ala | Ala | Ala | Gly | Lys | Phe | Gln | Val | Asp | Thr | Gly |
| | | | 195 | | | | 200 | | | | | | 205 | | |
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| | | | 210 | | | 215 | | | | | | 220 | | | |
| Asp | Asp | Asn | Pro | Phe | Phe | Asp | Leu | Ser | Val | Tyr | Phe | Leu | Pro | Val | Ala |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Arg | Tyr | Ile | Arg | Ala | Ala | Leu | Ser | Val | Pro | Gln | Gly | Arg | Val | Leu | Val |

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| Asn | Trp | Ser | Ser | Ala | Arg | Asn | Ser | Ala | Ser | Ala | Ala | Glu | Ala | Arg | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
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| | | 35 | | | | | 40 | | | | | 45 | | | |
| Thr | Gly | Thr | Ser | Val | Ala | His | His | Gln | Ser | Lys | Met | Gly | Trp | Lys | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ile | Val | Leu | Leu | Glu | Gln | Gly | Arg | Leu | Ala | Ala | Gly | Ser | Thr | Arg | Phe |
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| Cys | Ala | Gly | Ile | Leu | Ser | Thr | Ala | Arg | His | Leu | Thr | Ile | Glu | Gln | Lys |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| | | | | 85 | | | | | 90 | | | | | 95 | | | | | |
| Met | Ala | Asp | Tyr | Ser | Asn | Lys | Leu | Tyr | Tyr | Gln | Leu | Glu | Gln | Glu | Thr | | | | |
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| Gly | Ile | Gln | Thr | Gly | Tyr | Thr | Arg | Thr | Gly | Ser | Ile | Phe | Leu | Ala | Gln | | | | |
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| | | 130 | | | | | 135 | | | | 140 | | | | | | | | |
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<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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| Trp | Lys | Glu | Glu | Met | Glu | Leu | Thr | Leu | Val | Gly | Leu | Gln | Tyr | Ser | Gly |
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| Lys | Thr | Thr | Phe | Val | Asn | Val | Ile | Ala | Ser | Gly | Gln | Phe | Ser | Glu | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Met | Ile | Pro | Thr | Val | Gly | Phe | Asn | Met | Arg | Lys | Val | Thr | Lys | Gly | Asn |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Val | Thr | Ile | Lys | Ile | Trp | Asp | Ile | Gly | Gly | Gln | Pro | Arg | Phe | Arg | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Met | Trp | Glu | Arg | Tyr | Cys | Arg | Gly | Val | Asn | Ala | Ile | Val | Tyr | Met | Ile |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Ala | Ala | Asp | Arg | Glu | Lys | Ile | Glu | Ala | Ser | Arg | Asn | Glu | Leu | His |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Asn | Leu | Leu | Asp | Lys | Pro | Gln | Leu | Gln | Gly | Ile | Pro | Val | Leu | Val | Leu |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Gly | Asn | Lys | Arg | Asp | Leu | Pro | Gly | Ala | Leu | Asp | Glu | Lys | Glu | Leu | Ile |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Glu | Lys | Met | Asn | Leu | Ser | Ala | Ile | Gln | Asp | Arg | Glu | Ile | Cys | Cys | Tyr |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Ser | Ile | Ser | Cys | Lys | Glu | Lys | Asp | Asn | Ile | Asp | Ile | Thr | Leu | Gln | Trp |
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 Gln Pro Val Gly Gly Gly Gly Ser Pro Ser Asp Phe Tyr Leu Cys Ser
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 Leu Leu Ala Ser Gly Xaa Ala Ala Leu Ala Cys Val Phe Leu Gly Val

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| Leu | Thr | Gly | Ile | Ala | Ser | Leu | Val | Leu | Leu | Gly | Leu | Trp | Asp | Tyr Leu |
| | | | 100 | | | | | 105 | | | | 110 | | |
| Asn | Glu | Ala | Ala | Ile | Thr | Thr | Phe | Ser | Val | Leu | Gly | Leu | Phe | Ser Ser |
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| Gln | Ala | Ala | Ala | Ile | Leu | Ser | Thr | Leu | Leu | Ala | Ala | Glu | Val | Ile Pro |
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| Thr | Thr | Val | Arg | Gly | Arg | Gly | Leu | Gly | Leu | Ile | Met | Ala | Leu | Gly Ala |
| 145 | | | | | 150 | | | | | 155 | | | | 160 |
| Leu | Gly | Gly | Leu | Ser | Gly | Pro | Ala | Gln | Arg | Leu | His | Met | Gly | His Gly |
| | | | 165 | | | | | 170 | | | | | 175 | |
| Ala | Phe | Leu | Gln | His | Val | Val | Leu | Ala | Ala | Cys | Ala | Leu | Leu | Cys Ile |
| | | 180 | | | | | 185 | | | | 190 | | | |
| Leu | Ser | Ile | Met | Leu | Leu | Pro | Glu | Thr | Lys | Arg | Lys | Leu | Leu | Pro Glu |
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<211> 1368

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<210> 4204

<211> 80

<212> PRT

<213> Homo sapiens

<400> 4204

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Phe | Tyr | Asp | Val | Ile | Thr | Trp | Ile | Val | Thr | Gln | Val | Ala | Ile | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Tyr | Thr | Val | Val | Pro | Phe | Val | Leu | Leu | Ser | Ile | Lys | Pro | Ser | Leu | Thr |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| Phe | Tyr | Ser | Ser | Trp | Tyr | Tyr | Cys | Leu | His | Ile | Leu | Gly | Ile | Leu | Val |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Leu | Leu | Leu | Leu | Pro | Val | Lys | Lys | Asn | Ser | Lys | Lys | Lys | Glu | Tyr | Thr |
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<210> 4205

<211> 6523

<212> DNA

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<400> 4205

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 Ile Glu Tyr Leu Lys Ser Ser Asp Arg Leu Asp Glu Ala Ala Gln Arg
 195 200 205
 Leu Ala Thr Val Val Asn Asp Glu Arg Phe Val Ser Lys Ala Gly Lys
 210 215 220
 Ser Asn Tyr Gln Leu Trp His Glu Leu Cys Asp Leu Ile Ser Gln Asn
 225 230 235 240
 Pro Asp Lys Val Gln Ser Leu Asn Val Asp Ala Ile Ile Arg Gly Gly
 245 250 255
 Leu Thr Arg Phe Thr Asp Gln Leu Gly Lys Leu Trp Cys Ser Leu Ala
 260 265 270
 Asp Tyr Tyr Ile Arg Ser Gly His Phe Glu Lys Ala Arg Asp Val Tyr
 275 280 285
 Glu Glu Ala Ile Arg Thr Val Met Thr Val Arg Asp Phe Thr Gln Val
 290 295 300
 Phe Asp Ser Tyr Ala Gln Phe Glu Glu Ser Met Ile Ala Ala Lys Met
 305 310 315 320
 Glu Thr Ala Ser Glu Leu Gly Arg Glu Glu Asp Asp Val Asp Leu
 325 330 335
 Glu Leu Arg Leu Ala Arg Phe Glu His Leu Ile Ser Arg Arg Pro Leu

340 345 350
 His Leu Ser Ser Val Leu Leu Arg Gln Asn Pro His His Val His Glu
 355 360 365
 Trp His Lys Arg Val Ala Leu His Gln Gly Arg Pro Arg Glu Ile Ile
 370 375 380
 Asn Thr Tyr Thr Glu Ala Val Gln Thr Val Asp Pro Phe Lys Ala Thr
 385 390 395 400
 Gly Lys Pro His Thr Leu Trp Val Ala Phe Ala Lys Phe Tyr Glu Asp
 405 410 415
 Asn Gly Gln Leu Asp Asp Ala Arg Val Ile Leu Glu Lys Ala Thr Lys
 420 425 430
 Val Asn Phe Lys Gln Val Asp Asp Leu Ala Ser Val Trp Cys Gln Cys
 435 440 445
 Gly Glu Leu Glu Leu Arg His Glu Asn Tyr Asp Glu Ala Leu Arg Leu
 450 455 460
 Leu Arg Lys Ala Thr Ala Leu Pro Pro Pro Gly Arg Val Phe Asp Gly
 465 470 475 480
 Ser Glu Pro Val Gln Asn Arg Val Tyr Lys Ser Leu Lys Val Trp Ser
 485 490 495
 Met Leu Ala Asp Leu Glu Glu Ser Leu Gly Thr Phe Gln Ser Thr Lys
 500 505 510
 Ala Val Tyr Asp Arg Ile Leu Asp Leu Arg Ile Ala Thr Pro Gln Ile
 515 520 525
 Val Ile Asn Tyr Ala Met Phe Leu Glu Glu His Lys Tyr Phe Glu Glu
 530 535 540
 Ser Phe Lys Ala Tyr Glu Arg Gly Ile Ser Leu Phe Lys Trp Pro Asn
 545 550 555 560
 Val Ser Asp Ile Trp Ser Thr Tyr Leu Thr Lys Phe Ile Ala Arg Tyr
 565 570 575
 Gly Gly Arg Lys Leu Glu Arg Ala Arg Asp Leu Phe Glu Gln Ala Leu
 580 585 590
 Asp Gly Cys Pro Pro Lys Tyr Ala Lys Thr Leu Tyr Leu Leu Tyr Ala
 595 600 605
 Gln Leu Glu Glu Glu Trp Gly Leu Ala Arg His Ala Met Ala Val Tyr
 610 615 620
 Glu Arg Ala Thr Arg Ala Val Glu Pro Ala Gln Gln Tyr Asp Met Phe
 625 630 635 640
 Asn Ile Tyr Ile Lys Arg Ala Ala Glu Ile Tyr Gly Val Thr His Thr
 645 650 655
 Arg Gly Ile Tyr Gln Lys Ala Ile Glu Val Leu Ser Asp Glu His Ala
 660 665 670
 Arg Glu Met Cys Leu Arg Phe Ala Asp Met Glu Cys Lys Leu Gly Glu
 675 680 685
 Ile Asp Arg Ala Arg Ala Ile Tyr Ser Phe Cys Ser Gln Ile Cys Asp
 690 695 700
 Pro Arg Thr Thr Gly Ala Phe Trp Gln Thr Trp Lys Asp Phe Glu Val
 705 710 715 720
 Arg His Gly Asn Glu Asp Thr Ile Arg Glu Met Leu Arg Ile Arg Arg
 725 730 735
 Ser Val Gln Ala Thr Tyr Asn Thr Gln Val Asn Phe Met Ala Ser Gln
 740 745 750
 Met Leu Lys Val Ser Gly Ser Ala Thr Gly Thr Val Ser Asp Leu Ala
 755 760 765
 Pro Gly Gln Ser Gly Met Asp Asp Met Lys Leu Leu Glu Gln Arg Ala

| | | |
|---|---------------------|-------------------------|
| 770 | 775 | 780 |
| Glu Gln Leu Ala Ala | Glu Ala Glu Arg Asp | Gln Pro Leu Arg Ala Gln |
| 785 | 790 | 795 |
| Ser Lys Ile Leu Phe Val Arg Ser Asp Ala Ser Arg Glu Glu Leu Ala | | 800 |
| | 805 | 810 |
| Glu Leu Ala Gln Gln Val Asn Pro Glu Glu Ile Gln Leu Gly Glu Asp | | 815 |
| | 820 | 825 |
| Glu Asp Glu Asp Glu Met Asp Leu Glu Pro Asn Glu Val Arg Leu Glu | | 830 |
| | 835 | 840 |
| Gln Gln Ser Val Pro Ala Ala Val Phe Gly Ser Leu Lys Glu Asp | | 845 |
| 850 | 855 | 860 |

<210> 4211

<211> 456

<212> DNA

<213> Homo sapiens

<400> 4211

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ggggatcgct agccccagc ttctcagaac taaatatgaa agctcttgct cgtctacgct
60
tagttacaac agactccctg ggctactgt aggggtcaag agcagatttc cagactctca
120
agctggaaaa gagacgctcc aactgcgac gacaaccaac acatgggaca agctgagaaa
180
gtgcactcag gacttcgctg gatgtcacca ccatggcaat acttagatcc tgttgcttaa
240
gcataccatg tcgctgaaag agggaaagaa aatgaaagag cgtcctttaa aaagacgtaa
300
aattacactt tcactactac tggttcctat ccttgtgcag taaagtacaa cctggccagg
360
gtttaccagc tctacctgca actgagtcag aaaggcaaag tagtcagctt tgtccatgct
420
gtacggaatt tgctccacaa acccccttgc tctaga
456

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<210> 4212

<211> 81

<212> PRT

<213> Homo sapiens

<400> 4212

| | |
|---|----|
| Met Leu Lys Gln Gln Asp Leu Ser Ile Ala Met Val Val Thr Ser Arg | |
| 1 | 5 |
| Glu Val Leu Ser Ala Leu Ser Gln Leu Val Pro Cys Val Gly Cys Arg | 10 |
| | 15 |
| | 20 |
| Arg Ser Val Glu Arg Leu Phe Ser Ser Leu Arg Val Trp Lys Ser Ala | 25 |
| | 30 |
| | 35 |
| Leu Asp Pro Tyr Ser Arg Pro Arg Glu Ser Val Val Thr Lys Arg Arg | 40 |
| | 45 |
| | 50 |
| Arg Ala Arg Ala Phe Ile Phe Ser Ser Glu Lys Leu Gly Ala Ser Asp | 55 |
| | 60 |
| 65 | 70 |
| Pro | 75 |
| | 80 |

<210> 4213
 <211> 383
 <212> DNA
 <213> Homo sapiens

<400> 4213
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 60
 atggaggcac gcgagggcat gcacctcaag aacgtggact tccgtgagtt catggtggcc
 120
 ttccccgacc cggccccggcc gccctggtag cctgtctcgt cggccttctg ggccgcgccg
 180
 ctgctcacgc tgctgtggcc gctgcgagtg ctggccgagt accgcacggc ctacgcgcac
 240
 taccacgtgg agaagctggt tggcctggag ggccccggct cggccagcag cgcaggcggt
 300
 ggctcagcc ccagcgatga gctgctgccc ccgtcaccc accgcctgcc gcgggtcaac
 360
 acagtagaca gcacggagct cgg
 383

<210> 4214
 <211> 127
 <212> PRT
 <213> Homo sapiens

<400> 4214
 Xaa Ala Tyr Leu Cys Gln Arg Ala Arg Phe Phe Ala Glu Asn Glu Gly
 1 5 10 15
 Leu Asp Asp Tyr Met Glu Ala Arg Glu Gly Met His Leu Lys Asn Val
 20 25 30
 Asp Phe Arg Glu Phe Met Val Ala Phe Pro Asp Pro Ala Arg Pro Pro
 35 40 45
 Trp Tyr Ala Cys Ser Ser Ala Phe Trp Ala Ala Ala Leu Leu Thr Leu
 50 55 60
 Ser Trp Pro Leu Arg Val Leu Ala Glu Tyr Arg Thr Ala Tyr Ala His
 65 70 75 80
 Tyr His Val Glu Lys Leu Phe Gly Leu Glu Gly Pro Gly Ser Ala Ser
 85 90 95
 Ser Ala Gly Gly Gly Leu Ser Pro Ser Asp Glu Leu Leu Pro Pro Leu
 100 105 110
 Thr His Arg Leu Pro Arg Val Asn Thr Val Asp Ser Thr Glu Leu
 115 120 125

<210> 4215
 <211> 939
 <212> DNA
 <213> Homo sapiens

<400> 4215
 nggtacctcg gctgaataaa aattcaaaaa aacagcaatg gacaggaact tgagaagacg
 60
 ctggaagaaa gcaaagaaat ggatatcaaa cgtaaagaaa ataaaggcaa tgatacccct
 120

ttggccctag agagtacaaa cactgaaaag gagacaagcc tggaggaaac aaaaatcggg
 180
 gagatcctga tccagggctt gacagaagat atggtgactg ttttaatccg ggcctgctg
 240
 agcatgctgg gagtccctgt ggaccagat actttgcatg ccaccctttg tttctgtttg
 300
 agggtcactc ggggccccca attagccatg atgtttgcag aactgaagaa taccgcgatg
 360
 atcttgaatt tgaccagag ctcaggcttc aatgggttta ctccctggt cacccttctc
 420
 ttaagacaca tcattgagga cccctgtacc ctctgcata ccatggaaa ggtgtctgc
 480
 tcagcagcta caagtggagc tggtagcact acctctggtg ttgtgtctgg cagcctcggc
 540
 tctcgggaga tcaactacat ccttcgtgtc cttgggccag ccgcatgccg caatccagac
 600
 atattcacag aagtggccaa ctgctgtatc cgcctgcgcc ttctgcccc tcgaggctca
 660
 ggaactgctt cagatgatga atttgagaat cttagaatta aaggccctaa tgctgtacag
 720
 ctggtgaaga ccacccttt gaagccctca cctctgcctg tcacccctga tactatcaag
 780
 gaagtgatct atgatatgct gaatgctctg gctgcatacc atgctccaga ggaagcagat
 840
 aaatctgac ctaaacctgg ggttatgacc caagagggtg gccagctcct gcaagacatg
 900
 ggtgatgatg tataccagca gtaccgggtca cttacgcgt
 939

<210> 4216

<211> 287

<212> PRT

<213> Homo sapiens

<400> 4216

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ile | Lys | Arg | Lys | Glu | Asn | Lys | Gly | Asn | Asp | Thr | Pro | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Glu | Ser | Thr | Asn | Thr | Glu | Lys | Glu | Thr | Ser | Leu | Glu | Glu | Thr | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ile | Gly | Glu | Ile | Leu | Ile | Gln | Gly | Leu | Thr | Glu | Asp | Met | Val | Thr | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Ile | Arg | Ala | Cys | Val | Ser | Met | Leu | Gly | Val | Pro | Val | Asp | Pro | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Leu | His | Ala | Thr | Leu | Cys | Phe | Cys | Leu | Arg | Val | Thr | Arg | Gly | Pro |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gln | Leu | Ala | Met | Met | Phe | Ala | Glu | Leu | Lys | Asn | Thr | Arg | Met | Ile | Leu |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Asn | Leu | Thr | Gln | Ser | Ser | Gly | Phe | Asn | Gly | Phe | Thr | Pro | Leu | Val | Thr |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Leu | Leu | Arg | His | Ile | Ile | Glu | Asp | Pro | Cys | Thr | Leu | Arg | His | Thr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Met | Glu | Lys | Val | Val | Arg | Ser | Ala | Ala | Thr | Ser | Gly | Ala | Gly | Ser | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Ser | Gly | Val | Val | Ser | Gly | Ser | Leu | Gly | Ser | Arg | Glu | Ile | Asn | Tyr |

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145          150          155          160
Ile Leu Arg Val Leu Gly Pro Ala Ala Cys Arg Asn Pro Asp Ile Phe
          165          170          175
Thr Glu Val Ala Asn Cys Cys Ile Arg Ile Ala Leu Pro Ala Pro Arg
          180          185          190
Gly Ser Gly Thr Ala Ser Asp Asp Glu Phe Glu Asn Leu Arg Ile Lys
          195          200          205
Gly Pro Asn Ala Val Gln Leu Val Lys Thr Thr Pro Leu Lys Pro Ser
          210          215          220
Pro Leu Pro Val Ile Pro Asp Thr Ile Lys Glu Val Ile Tyr Asp Met
225          230          235          240
Leu Asn Ala Leu Ala Ala Tyr His Ala Pro Glu Glu Ala Asp Lys Ser
          245          250          255
Asp Pro Lys Pro Gly Val Met Thr Gln Glu Val Gly Gln Leu Leu Gln
          260          265          270Met Gly Asp Asp
Val Tyr Gln Gln Tyr Arg Ser Leu Thr Arg
          275          280          285

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<210> 4217

<211> 619

<212> DNA

<213> Homo sapiens

<400> 4217

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catacacaca cacacccttc agtcataggc tcacaagagt ctctcttgtc tctctctcat
120
acatacacac acacacacaa ccagccacag gccacaaaag gtgtctctct ctttgtccct
180
gtctgtctct tcgcactcac acacacacat ctcagccaca ggcccaccag agtctgtctg
240
tctctttgtc tctctcactc tctctcacac acatacacct cagccacagg cccacaaggg
300
tctctctcct tgtccctggc tctctctctc cgcacactcc cacacacaca catacagctc
360
agccacaggc ccacgagggt gtctctctct ctctctctct ctcacacaca cacacacaca
420
cacacacgcc tgtgcagctc cacagggggc tggggcagga gacagatctg aatacacata
480
ccaccctgtg ctgtgagtgg ccactcccat ccaacaactg agactttctg ttactggggc
540
aagggtttct gccaaactca cttcccttat aatgaatgaa ttatccctca gaagggtcca
600
cagtcctccc ctggcgcgc
619

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<210> 4218

<211> 155

<212> PRT

<213> Homo sapiens

<400> 4218

Met His Thr Tyr Thr His Thr Pro Leu Ser His Arg Leu Thr Arg Val

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<210> 4219
<211> 774
<212> DNA
<213> Homo sapiens
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<210> 4220

<211> 258
 <212> PRT
 <213> Homo sapiens

<400> 4220

Xaa Gly Arg Ala Pro Ala Pro Val Ala Leu Gln Gln Asp His Ala Pro
 1 5 10 15
 Ala Glu Ala Pro Pro Leu Gln Gln Arg Pro Arg Gln Arg Gln Gln
 20 25 30
 Arg Ala Glu Arg Gly Ala Pro Ala Gly His Gly Glu Asp Gly Pro Val
 35 40 45
 Leu Pro Gln Arg Arg Gln Gln Arg Leu Arg Glu Arg Asp Ala Gly Gln
 50 55 60
 Arg Gly His Arg Gln Arg Val Leu Gly Ala Gly Leu His Glu Arg Glu
 65 70 75 80
 Gln Gln Leu Arg Gly Arg Gln Val Pro Glu Pro Gln Asp Pro Glu Glu
 85 90 95
 Thr Leu Gln Ser Arg Phe Ser Glu Thr Glu Ala Tyr Pro Ser Thr Ile
 100 105 110
 Pro Gly His Leu Phe Pro Cys Glu Lys Thr Pro Gln Gln His Arg Arg
 115 120 125
 Pro Leu Gly Gly Trp Xaa Pro Leu Arg Ser Ser Pro Arg Gly Leu Gly
 130 135 140
 Glu Pro Leu Arg Leu Lys Ser Xaa Glu Ile Asp Asp Val Glu Arg Leu
 145 150 155 160
 Gln Arg Arg Arg Gly Gly Ala Ser Lys Glu Ala Met Cys Phe Asn Ala
 165 170 175
 Lys Leu Lys Ile Leu Glu His Arg Gln Gln Arg Ile Ala Glu Val Arg
 180 185 190
 Ala Lys Tyr Glu Trp Leu Met Lys Glu Leu Glu Ala Thr Lys Gln Tyr
 195 200 205
 Leu Met Leu Asp Pro Asn Lys Trp Leu Ser Glu Phe Asp Leu Glu Gln
 210 215 220
 Val Trp Glu Leu Asp Ser Leu Glu Tyr Leu Glu Ala Leu Glu Cys Val
 225 230 235 240
 Thr Glu Arg Leu Glu Ser Arg Val Asn Phe Cys Lys Ala His Leu Met
 245 250 255
 Met Leu

<210> 4221
 <211> 789
 <212> DNA
 <213> Homo sapiens

<400> 4221

aatgtgaaga ggattaaaga ataaagaaaa aacaaaaaag tcttatacta aaataagaaa
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 tcagcccat cttggcacag ttctcatgca gaattattgca cccagtgtga actaacgcta
 120
 gaagcttcaa actgtataaa tttaaagtga ttgcatatt ataaaaataa agataaacat
 180
 atacatattt tacactagtt atggaacagc aatgaacgtc agtcgatccc tctttcacat
 240

ttaacagaac tgaaatctga gtgctctaaa tactgccacc tgtactgtaa ctatggctta
 300
 tatgtgcacg gaaaacaaaa tccctgagaa gccattcgac tttttttttt tttcttttct
 360
 tcaagtagcg cgctccttgg aggatcacag ttctgagggt cagggtgtaa aacatttgc
 420
 ccatgtttct gtccatgctt cccccacca cccctcccc acctcttccc cagtcgtcca
 480
 aaaagcacc tgcaagcacg cgttgctact caagttcaca gaacacgctg gggtgagtgc
 540
 agagggtctg ccagggtcaa aagatggtcc aggtgttcag atgctctctt ttctccatgg
 600
 aaattccaca gccacaaacg tcaactgggtt ctgtgctttt caccaacatt ctcccttaa
 660
 aaattgggtg tcctaaagtc acagtttggg tacagtaaaa atgatggcat aaggaaaaga
 720
 agcactatct tttccactta atttccaag aaagtatgaa gatacttggg acaggggctg
 780
 atcacagtc
 789

<210> 4222

<211> 127

<212> PRT

<213> Homo sapiens

<400> 4222

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Tyr | Met | Cys | Thr | Glu | Asn | Lys | Ile | Pro | Glu | Lys | Pro | Phe | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Phe | Phe | Phe | Ser | Phe | Leu | Gln | Val | Ala | Arg | Ser | Leu | Glu | Asp | His |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Ser | Glu | Val | Gln | Val | Val | Lys | His | Leu | Leu | His | Val | Leu | Val | His |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Ser | Pro | His | His | Pro | Leu | Pro | Thr | Ser | Ser | Pro | Val | Val | Gln | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Pro | Cys | Lys | His | Ala | Leu | Ser | Leu | Lys | Phe | Thr | Glu | His | Ala | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Val | Ser | Ala | Glu | Gly | Leu | Pro | Gly | Ala | Lys | Asp | Gly | Pro | Gly | Val | Gln |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Met | Leu | Ser | Phe | Leu | His | Gly | Asn | Ser | Thr | Ala | Thr | Asn | Val | Thr | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Phe | Cys | Ala | Phe | His | Gln | His | Ser | Ser | Leu | Lys | Asn | Trp | Cys | Ser | |
| | | 115 | | | | | 120 | | | | | 125 | | | |

<210> 4223

<211> 852

<212> DNA

<213> Homo sapiens

<400> 4223

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 gaggccgtgg cctatttgca ctcaactcaag atcgtgcaca ggaatctcaa gctggagaa
 120

ctggtttact acaaccggct gaagaactcg aagattgtca tcagtgactt ccatctggct
 180
 aagctagaaa atggcctcat caaggagccc tgtgggaccc ccgaagattt tgcccccaa
 240
 ggggaaggcc ggcagcggta tggacgccct gtggactgct gggccattgg agtcatcatg
 300
 tacatcctgc tttcaggcaa tccacctttc tatgaggagg tggaagaaga tgattatgag
 360
 aaccatgata agaattcttt ccgcaagatc ctggctggtg actatgagtt tgactctcca
 420
 tattgggatg atatttcgca ggcagccaaa gacctggtca caaggctgat ggaggtggag
 480
 caagaccagc ggatcactgc agaagaggcc atctcccatg agtggatttc tggcaatgct
 540
 gcttctgata agaacatcaa ggatggtgtc tgtgccaga ttgaaaagaa ctttgccagg
 600
 gccaaagtga agaaggctgt ccgagtgacc accctcatga aacggctccg ggcaccagag
 660
 cagtccagca cggctgcagc ccagtcggcc tcagccacag aactgccac ccccggggct
 720
 gcagaccgta gtgccacccc agccacagat ggaagtgcc cccagccac tgatggcagt
 780
 gtcaccccag ccaccgatgg aagcatcact ccagccattg atgggagtgt caccacagcc
 840
 actgacagga gc
 852

<210> 4224

<211> 284

<212> PRT

<213> Homo sapiens

<400> 4224

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Asp | Gln | Gly | Tyr | Tyr | Ser | Glu | Arg | Asp | Thr | Ser | Asn | Val | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Arg | Gln | Val | Leu | Glu | Ala | Val | Ala | Tyr | Leu | His | Ser | Leu | Lys | Ile | Val |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| His | Arg | Asn | Leu | Lys | Leu | Glu | Asn | Leu | Val | Tyr | Tyr | Asn | Arg | Leu | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asn | Ser | Lys | Ile | Val | Ile | Ser | Asp | Phe | His | Leu | Ala | Lys | Leu | Glu | Asn |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gly | Leu | Ile | Lys | Glu | Pro | Cys | Gly | Thr | Pro | Glu | Asp | Phe | Ala | Pro | Gln |
| 65 | | | | 70 | | | | | | 75 | | | | 80 | |
| Gly | Glu | Gly | Arg | Gln | Arg | Tyr | Gly | Arg | Pro | Val | Asp | Cys | Trp | Ala | Ile |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Gly | Val | Ile | Met | Tyr | Ile | Leu | Leu | Ser | Gly | Asn | Pro | Pro | Phe | Tyr | Glu |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Glu | Val | Glu | Glu | Asp | Asp | Tyr | Glu | Asn | His | Asp | Lys | Asn | Leu | Phe | Arg |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Lys | Ile | Leu | Ala | Gly | Asp | Tyr | Glu | Phe | Asp | Ser | Pro | Tyr | Trp | Asp | Asp |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Ile | Ser | Gln | Ala | Ala | Lys | Asp | Leu | Val | Thr | Arg | Leu | Met | Glu | Val | Glu |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Gln | Asp | Gln | Arg | Ile | Thr | Ala | Glu | Glu | Ala | Ile | Ser | His | Glu | Trp | Ile |

165 170 175
 Ser Gly Asn Ala Ala Ser Asp Lys Asn Ile Lys Asp Gly Val Cys Ala
 180 185 190
 Gln Ile Glu Lys Asn Phe Ala Arg Ala Lys Trp Lys Lys Ala Val Arg
 195 200 205
 Val Thr Thr Leu Met Lys Arg Leu Arg Ala Pro Glu Gln Ser Ser Thr
 210 215 220
 Ala Ala Ala Gln Ser Ala Ser Ala Thr Asp Thr Ala Thr Pro Gly Ala
 225 230 235 240
 Ala Asp Arg Ser Ala Thr Pro Ala Thr Asp Gly Ser Ala Thr Pro Ala
 245 250 255
 Thr Asp Gly Ser Val Thr Pro Ala Thr Asp Gly Ser Ile Thr Pro Ala
 260 265 270
 Ile Asp Gly Ser Val Thr Pro Ala Thr Asp Arg Ser
 275 280

<210> 4225

<211> 470

<212> DNA

<213> Homo sapiens

<400> 4225

nntgtacaag aaagtgagcc agtcatcgctc aatattcaag tgatggatgc aaatgataac
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 120
 gacaggggtcc tacagttaac tgcagtcgac gcagacgaag ggtcaaatgg ggagatcaca
 180
 tatgaaatcc ttgttggggc tcagggagac ttcctcatca ataaaacaac agggcttacc
 240
 accatcgctc caggggtgga aatgatagtc gggcggactt acgcactccc ggtccaagca
 300
 gcggataatg ctctcctgc aaagcaaagg actcccatct gcactgtgta tattgaagtg
 360
 cttccaccaa ataataaaag cctcctcgc ttcccacagc tgatgtatag ccttgaaatt
 420
 agtgaagcca tgagggttgg tgctgtttta ttaaactctac aggcaactga
 470

<210> 4226

<211> 156

<212> PRT

<213> Homo sapiens

<400> 4226

Xaa Val Gln Glu Ser Glu Pro Val Ile Val Asn Ile Gln Val Met Asp
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 Ala Asn Asp Asn Thr Pro Thr Phe Pro Glu Ile Ser Tyr Asp Val Tyr
 20 25 30
 Val Tyr Thr Asp Met Arg Pro Gly Asp Arg Val Leu Gln Leu Thr Ala
 35 40 45
 Val Asp Ala Asp Glu Gly Ser Asn Gly Glu Ile Thr Tyr Glu Ile Leu
 50 55 60
 Val Gly Ala Gln Gly Asp Phe Ile Ile Asn Lys Thr Thr Gly Leu Ile

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Thr | Ile | Ala | Pro | Gly | Val | Glu | Met | Ile | Val | Gly | Arg | Thr | Tyr | Ala | Leu |
| | | 85 | | 90 | | 95 | | | | | | | | | |
| Pro | Val | Gln | Ala | Ala | Asp | Asn | Ala | Pro | Pro | Ala | Lys | Gln | Arg | Thr | Pro |
| | | 100 | | 105 | | 110 | | | | | | | | | |
| Ile | Cys | Thr | Val | Tyr | Ile | Glu | Val | Leu | Pro | Pro | Asn | Asn | Gln | Ser | Pro |
| | | 115 | | 120 | | 125 | | | | | | | | | |
| Pro | Arg | Phe | Pro | Gln | Leu | Met | Tyr | Ser | Leu | Glu | Ile | Ser | Glu | Ala | Met |
| | | 130 | | 135 | | 140 | | | | | | | | | |
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<212> DNA

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<400> 4227

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1080

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<400> 4228

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
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| Leu | Ala | Thr | Leu | Glu | Lys | Gln | Glu | Ile | Ile | Glu | Gln | Leu | Leu | Ser | Asn |
| | | | 35 | | | | | 40 | | | | | 45 | | |
| Ile | Phe | His | Lys | Glu | Lys | Asn | Glu | Ser | Ala | Ile | Val | Ser | Ala | Ile | Gln |
| | | | 50 | | | | | 55 | | | | | 60 | | |
| Ile | Leu | Leu | Thr | Leu | Leu | Glu | Thr | Arg | Arg | Pro | Thr | Phe | Glu | Gly | His |
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| Ile | Glu | Ile | Cys | Pro | Pro | Gly | Met | Ser | His | Ser | Ala | Cys | Ser | Val | Asn |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Lys | Ser | Val | Leu | Glu | Ala | Ile | Arg | Gly | Arg | Leu | Gly | Ser | Phe | His | Glu |
| | | | 100 | | | | | 105 | | | | | | 110 | |
| Leu | Leu | Leu | Glu | Pro | Pro | Lys | Lys | Ser | Val | Met | Lys | Thr | Thr | Trp | Gly |
| | | | 115 | | | | | 120 | | | | | 125 | | |
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| | | | 130 | | | | | 135 | | | | | 140 | | |
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| | | | 165 | | | | | 170 | | | | | | 175 | |
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| | | | 195 | | | | | 200 | | | | | 205 | | |
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| | | | 210 | | | | | 215 | | | | | 220 | | |
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| Lys | Gln | Ala | Glu | Gly | Gly | Arg | Arg | His | Gly | Tyr | Met | Gly | His | Leu | Thr |
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| Arg | Ile | Ala | Asn | Cys | Ile | Val | His | Ser | Thr | Asp | Lys | Gly | Pro | Asn | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Leu | Val | Gln | Gln | Leu | Ile | Lys | Gly | Lys | Leu | Phe | Val | Lys | Phe | Glu |
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<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

<400> 4230

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| Xaa | Gly | Val | Ser | Ile | Leu | Asp | Gln | Asp | Leu | Asp | Tyr | Leu | Ser | Glu | Gly | 1 | 5 | 10 | 15 |
| Leu | Glu | Gly | Arg | Ser | Gln | Ser | Pro | Val | Ala | Leu | Leu | Phe | Asp | Ala | Leu | 20 | 25 | 30 | |
| Leu | Arg | Pro | Asp | Thr | Asp | Phe | Gly | Gly | Asn | Met | Lys | Ser | Val | Leu | Thr | 35 | 40 | 45 | |
| Trp | Lys | His | Arg | Lys | Glu | His | Ala | Ile | Pro | His | Val | Val | Leu | Gly | Arg | 50 | 55 | 60 | |
| Asn | Leu | Pro | Gly | Gly | Ala | Trp | His | Ser | Ile | Glu | Gly | Ser | Met | Val | Ile | 65 | 70 | 75 | |
| Leu | Ser | Gln | Gly | Gln | Trp | Met | Gly | Leu | Pro | Asp | Leu | Glu | Val | Lys | Asp | 85 | 90 | 95 | |
| Trp | Met | Gln | Lys | Lys | Arg | Arg | Gly | Leu | Arg | Asn | Ser | Arg | Ala | Thr | Ala | 100 | 105 | 110 | |
| Gly | Asp | Ile | Ala | His | Tyr | Tyr | Arg | Asp | Tyr | Val | Val | Lys | Lys | Gly | Leu | 115 | 120 | 125 | |
| Gly | His | Asn | Phe | Val | Ser | Gly | Ala | Val | Val | Thr | Ala | Val | Glu | Trp | Gly | 130 | 135 | 140 | |
| Thr | Pro | Asp | Pro | Ser | Ser | Cys | Gly | Ala | Gln | Asp | Ser | Ser | Pro | Leu | Phe | 145 | 150 | 155 | |
| Gln | Val | Ser | Gly | Phe | Leu | Thr | Arg | Asn | Gln | Ala | Gln | Gln | Pro | Phe | Ser | 165 | 170 | 175 | |
| Leu | Trp | Ala | Arg | Asn | Val | Val | Leu | Ala | Thr | Gly | Thr | Phe | Asp | Ser | Pro | 180 | 185 | 190 | |
| Ala | Arg | Leu | Gly | Ile | Pro | Gly | Glu | Ala | Leu | Pro | Phe | Ile | His | His | Glu | 195 | 200 | 205 | |
| Leu | Ser | Ala | Leu | Glu | Ala | Ala | Thr | Arg | Val | Gly | Ala | Val | Thr | Pro | Ala | 210 | 215 | 220 | |
| Ser | Asp | Pro | Val | Leu | Ile | Ile | Gly | Ala | Gly | Leu | Ser | Ala | Ala | Asp | Ala | 225 | 230 | 235 | |
| Val | Leu | Tyr | Ala | Arg | His | Tyr | Asn | Ile | Pro | Val | Ile | His | Ala | Phe | Arg | 245 | 250 | 255 | |
| Arg | Ala | Val | Asp | Asp | Pro | Gly | Leu | Val | Phe | Asn | Gln | Leu | Pro | Lys | Met | 260 | 265 | 270 | |
| Leu | Tyr | Pro | Glu | Tyr | His | Lys | Val | His | Gln | Met | Met | Arg | Glu | Gln | Ser | 275 | 280 | 285 | |
| Ile | Leu | Ser | Pro | Ser | Pro | Tyr | Glu | Gly | Tyr | Arg | Ser | Leu | Pro | Arg | His | 290 | 295 | 300 | |
| Gln | Leu | Leu | Cys | Phe | Lys | Glu | Asp | Cys | Gln | Ala | Val | Phe | Gln | Asp | Leu | 305 | 310 | 315 | |
| Glu | Gly | Val | Glu | Lys | Val | Phe | Gly | Val | Ser | Leu | Val | Leu | Val | Leu | Ile | 325 | 330 | 335 | |
| Gly | Ser | His | Pro | Asp | Leu | Ser | Phe | Leu | Pro | Gly | Ala | Gly | Ala | Asp | Phe | 340 | 345 | 350 | |
| Ala | Val | Asp | Pro | Asp | Gln | Pro | Leu | Ser | Ala | Lys | Arg | Asn | Pro | Ile | Asp | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 355 | | 360 | | 365 | | | | | | | | | | |
| Val | Asp | Pro | Phe | Thr | Tyr | Gln | Ser | Thr | Arg | Gln | Glu | Gly | Leu | Tyr | Ala |
| | 370 | | | | | 375 | | | | 380 | | | | | |
| Met | Gly | Pro | Leu | Ala | Gly | Asp | Asn | Phe | Val | Arg | Phe | Val | Gln | Gly | Gly |
| 385 | | | | | 390 | | | | | 395 | | | | 400 | |
| Ala | Leu | Ala | Val | Ala | Ser | Ser | Leu | Leu | Arg | Lys | Glu | Thr | Arg | Lys | Pro |
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<211> 1588

<212> DNA

<213> Homo sapiens

<400> 4231

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<211> 434

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<213> Homo sapiens

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| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Cys | Gln | Lys | Gln | Ile | Lys | Glu | Leu | Arg | Asp | Gln | Ile | Val | Ser | Val | Gln |
| | 20 | | | | | | | 25 | | | | 30 | | | |
| Glu | Glu | Lys | Lys | Ile | Leu | Ala | Ile | Glu | Leu | Glu | Asn | Leu | Lys | Ser | Lys |
| | 35 | | | | | 40 | | | | | | 45 | | | |
| Leu | Val | Glu | Val | Ile | Glu | Glu | Val | Asn | Lys | Val | Lys | Gln | Glu | Lys | Thr |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Val | Leu | Asn | Ser | Glu | Val | Leu | Glu | Gln | Arg | Lys | Val | Leu | Glu | Lys | Cys |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Asn | Arg | Val | Ser | Met | Leu | Ala | Val | Glu | Glu | Tyr | Glu | Glu | Met | Gln | Val |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Asn | Leu | Glu | Leu | Glu | Lys | Asp | Leu | Arg | Lys | Lys | Ala | Glu | Ser | Phe | Ala |
| | 100 | | | | | | 105 | | | | | | 110 | | |
| Gln | Glu | Met | Phe | Leu | Glu | Pro | Asn | Gln | Gly | Lys | Lys | Thr | Lys | Pro | Pro |
| | 115 | | | | | 120 | | | | | | 125 | | | |
| Phe | Gly | Arg | Gln | Ser | Ser | Ile | Leu | Asp | Gln | Gln | Leu | Ala | Leu | Asp | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asn | Ala | Lys | Leu | Thr | Gln | Gln | Leu | Glu | Glu | Arg | Ile | Gln | His | Gln | |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Gln | Lys | Val | Lys | Glu | Leu | Glu | Glu | Gln | Leu | Glu | Asn | Glu | Thr | Leu | His |
| | | | 165 | | | | 170 | | | | | | | 175 | |
| Lys | Glu | Ile | His | Asn | Leu | Lys | Gln | Gln | Leu | Glu | Leu | Leu | Glu | Glu | Asp |
| | 180 | | | | | | 185 | | | | | | 190 | | |
| Lys | Lys | Glu | Leu | Glu | Leu | Lys | Tyr | Gln | Asn | Ser | Glu | Glu | Lys | Ala | Arg |
| | 195 | | | | | 200 | | | | | | 205 | | | |
| Asn | Leu | Lys | His | Ser | Val | Asp | Glu | Leu | Gln | Lys | Arg | Val | Asn | Gln | Ser |
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| Glu | Asn | Ser | Val | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Leu | Pro | Pro |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Pro | Pro | Asn | Pro | Ile | Arg | Ser | Leu | Met | Ser | Met | Ile | Arg | Lys | Arg |

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 Ala Val Asp Glu Leu Lys Gly Ile Leu Gly Thr Leu Asn Lys Ser Thr
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 370 375 380
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2100
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2160
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2280

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 2460
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<210> 4234

<211> 833

<212> PRT

<213> Homo sapiens

<400> 4234

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| Gly | Ser | Leu | Lys | Gly | Asp | His | Ile | Leu | Tyr | His | Leu | Ile | Leu | Ile | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Ile | Ile | Phe | Ile | Ser | His | Gln | Asp | Lys | Ile | Pro | Gly | Gly | Gly | Ile |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Thr | Cys | Lys | Val | His | Thr | Ser | Pro | Pro | Met | Tyr | Ser | Leu | Asp | Arg | Ile |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | Ala | Gly | Phe | Arg | Thr | Arg | Ser | Gln | Met | Leu | Leu | Gly | His | Ile | Glu |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Glu | Gln | Asp | Lys | Val | Leu | His | Cys | Gln | Phe | Ser | Asp | Asn | Ser | Asp | Asp |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Glu | Glu | Ser | Glu | Gly | Gln | Glu | Lys | Ser | Gly | Thr | Arg | Cys | Arg | Ser | Arg |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Ser | Trp | Ile | Gln | Lys | Pro | Asp | Ser | Val | Cys | Ser | Leu | Val | Glu | Leu | Ser |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Asp | Thr | Gln | Asp | Glu | Thr | Gln | Lys | Ser | Asp | Leu | Glu | Asn | Glu | Asp | Leu |
| | 115 | | | | | 120 | | | | | 125 | | | | |
| Lys | Ile | Asp | Cys | Leu | Gln | Glu | Ser | Gln | Glu | Leu | Asn | Leu | Gln | Lys | Leu |
| | 130 | | | | 135 | | | | | 140 | | | | | |
| Lys | Asn | Ser | Glu | Arg | Ile | Leu | Thr | Glu | Ala | Lys | Gln | Lys | Met | Arg | Glu |
| 145 | | | 150 | | | | | | 155 | | | | | 160 | |
| Leu | Thr | Val | Asn | Ile | Lys | Met | Lys | Glu | Asp | Leu | Ile | Lys | Glu | Leu | Ile |
| | | 165 | | | | | | 170 | | | | | 175 | | |
| Lys | Thr | Gly | Asn | Asp | Ala | Lys | Ser | Val | Ser | Lys | Gln | Tyr | Thr | Leu | Lys |
| | 180 | | | | | | 185 | | | | | 190 | | | |
| Val | Thr | Lys | Leu | Glu | His | Asp | Ala | Glu | Gln | Ala | Lys | Val | Glu | Leu | Thr |
| | 195 | | | | | 200 | | | | | 205 | | | | |
| Glu | Thr | Gln | Lys | Gln | Leu | Gln | Glu | Leu | Glu | Asn | Lys | Asp | Leu | Ser | Asp |

| | | | | |
|---|---|-----|-----|-----|
| 210 | | 215 | | 220 |
| Val Ala Met Lys | Val Lys Leu Gln Lys Glu Phe Arg Lys Lys Val Asp | | | |
| 225 | 230 | 235 | 240 | |
| Ala Ala Lys Leu Arg Val Gln Val Leu Gln Lys Lys Gln Gln Asp Ser | | | | |
| 245 | 250 | 255 | | |
| Lys Lys Leu Ala Ser Leu Ser Ile Gln Asn Glu Lys Arg Ala Asn Glu | | | | |
| 260 | 265 | 270 | | |
| Leu Glu Gln Ser Val Asp His Met Lys Tyr Gln Lys Ile Gln Leu Gln | | | | |
| 275 | 280 | 285 | | |
| Arg Lys Leu Arg Glu Glu Asn Glu Lys Arg Lys Gln Leu Asp Ala Val | | | | |
| 290 | 295 | 300 | | |
| Ile Lys Arg Asp Gln Gln Lys Ile Lys Val Ile Gln Leu Lys Thr Gly | | | | |
| 305 | 310 | 315 | 320 | |
| Gln Glu Glu Gly Leu Lys Pro Lys Ala Glu Asp Leu Asp Ala Cys Asn | | | | |
| 325 | 330 | 335 | | |
| Leu Lys Arg Arg Lys Gly Ser Phe Gly Ser Ile Asp His Leu Gln Lys | | | | |
| 340 | 345 | 350 | | |
| Leu Asp Glu Gln Lys Lys Trp Leu Asp Glu Glu Val Glu Lys Val Leu | | | | |
| 355 | 360 | 365 | | |
| Asn Gln Arg Gln Glu Leu Glu Glu Leu Glu Ala Asp Leu Lys Lys Arg | | | | |
| 370 | 375 | 380 | | |
| Glu Ala Ile Val Ser Lys Lys Glu Ala Leu Leu Gln Glu Lys Ser His | | | | |
| 385 | 390 | 395 | 400 | |
| Leu Glu Asn Lys Lys Leu Arg Ser Ser Gln Ala Leu Asn Thr Asp Ser | | | | |
| 405 | 410 | 415 | | |
| Leu Lys Ile Ser Thr Arg Leu Asn Leu Glu Gln Glu Leu Ser Glu | | | | |
| 420 | 425 | 430 | | |
| Lys Asn Val Gln Leu Gln Thr Ser Thr Ala Glu Glu Lys Thr Lys Ile | | | | |
| 435 | 440 | 445 | | |
| Ser Glu Gln Val Glu Val Leu Gln Lys Glu Lys Asp Gln Leu Gln Lys | | | | |
| 450 | 455 | 460 | | |
| Arg Arg His Asp Val Asp Glu Lys Leu Lys Asn Gly Arg Val Leu Ser | | | | |
| 465 | 470 | 475 | 480 | |
| Pro Glu Glu Glu His Val Leu Phe Gln Leu Glu Glu Gly Ile Glu Ala | | | | |
| 485 | 490 | 495 | | |
| Leu Glu Ala Ala Ile Glu Tyr Arg Asn Glu Ser Ile Gln Asn Arg Gln | | | | |
| 500 | 505 | 510 | | |
| Lys Ser Leu Arg Ala Ser Phe His Asn Leu Ser Arg Gly Glu Ala Asn | | | | |
| 515 | 520 | 525 | | |
| Val Leu Glu Lys Leu Ala Cys Leu Ser Pro Val Glu Ile Arg Thr Ile | | | | |
| 530 | 535 | 540 | | |
| Leu Phe Arg Tyr Phe Asn Lys Val Val Asn Leu Arg Glu Ala Glu Arg | | | | |
| 545 | 550 | 555 | 560 | |
| Lys Gln Gln Leu Tyr Asn Glu Glu Met Lys Met Lys Val Leu Glu Arg | | | | |
| 565 | 570 | 575 | | |
| Asp Asn Met Val Arg Glu Leu Glu Ser Ala Leu Asp His Leu Lys Leu | | | | |
| 580 | 585 | 590 | | |
| Gln Cys Asp Arg Arg Leu Thr Leu Gln Gln Lys Glu His Glu Gln Lys | | | | |
| 595 | 600 | 605 | | |
| Met Gln Leu Leu Leu His His Phe Lys Glu Gln Asp Gly Glu Gly Ile | | | | |
| 610 | 615 | 620 | | |
| Met Glu Thr Phe Lys Thr Tyr Glu Asp Lys Ile Gln Gln Leu Glu Lys | | | | |
| 625 | 630 | 635 | 640 | |
| Asp Leu Tyr Phe Tyr Lys Lys Thr Ser Arg Asp His Lys Lys Lys Leu | | | | |

645 650 655
 Lys Glu Leu Val Gly Glu Ala Ile Arg Arg Gln Leu Ala Ser Ser Glu
 660 665 670
 Tyr Gln Glu Ala Gly Asp Gly Val Leu Lys Pro Glu Gly Gly Met
 675 680 685
 Leu Ser Glu Glu Leu Lys Trp Ala Ser Arg Pro Glu Ser Met Lys Leu
 690 695 700
 Ser Gly Arg Glu Arg Glu Met Asp Ser Ser Ala Ser Ser Leu Arg Thr
 705 710 715 720
 Gln Pro Asn Pro Gln Lys Leu Trp Glu Asp Ile Pro Glu Leu Pro Pro
 725 730 735
 Ile His Ser Ser Leu Ala Pro Pro Ser Gly His Met Leu Gly Asn Glu
 740 745 750
 Asn Lys Thr Glu Thr Asp Asp Asn Gln Phe Thr Lys Ser His Ser Arg
 755 760 765
 Leu Ser Ser Gln Ile Gln Val Val Gly Asn Val Gly Arg Leu His Gly
 770 775 780
 Val Thr Pro Val Lys Leu Cys Arg Lys Glu Leu Arg Gln Ile Ser Ala
 785 790 795 800
 Leu Glu Leu Ser Leu Arg Arg Ser Ser Leu Gly Val Gly Ile Gly Ser
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 Met Ala Ala Asp Ser Ile Glu Val Ser Arg Lys Pro Arg Asp Leu Lys
 820 825 830
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<210> 4235

<211> 971

<212> DNA

<213> Homo sapiens

<400> 4235

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 120
 gctattgggc tctcatttac aacttcaacg actaccaccg ccactttcac caccaacact
 180
 actaccacaa tcaccagtgg ctttactgtg aaccaaacc aactgttatc aagagggttt
 240
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 420
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 840
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 971

<210> 4236

<211> 198

<212> PRT

<213> Homo sapiens

<400> 4236

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Thr | Ala | Ala | Val | Ala | Thr | Thr | Thr | Ser | Ser | Ser | Thr | Met | Gln |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Phe | Thr | Ser | Ile | Ser | Asn | Ser | Leu | Thr | Ser | Thr | Ala | Ala | Ile | Gly | Leu |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ser | Phe | Thr | Thr | Ser | Thr | Thr | Thr | Thr | Ala | Thr | Phe | Thr | Thr | Asn | Thr |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Thr | Thr | Thr | Ile | Thr | Ser | Gly | Phe | Thr | Val | Asn | Gln | Asn | Gln | Leu | Leu |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ser | Arg | Gly | Phe | Glu | Asn | Leu | Val | Pro | Tyr | Thr | Ser | Thr | Val | Ser | Val |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Val | Ala | Thr | Pro | Val | Met | Thr | Tyr | Gly | His | Leu | Glu | Gly | Leu | Ile | Asn |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Glu | Trp | Asn | Leu | Glu | Leu | Glu | Asp | Gln | Glu | Lys | Tyr | Phe | Leu | Leu | Gln |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ala | Thr | Gln | Val | Asn | Ala | Trp | Asp | His | Thr | Leu | Ile | Glu | Asn | Gly | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Met | Ile | Arg | Ile | Leu | His | Gly | Glu | Val | Asn | Lys | Val | Lys | Leu | Asp | Gln |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Lys | Arg | Leu | Glu | Gln | Glu | Leu | Asp | Phe | Ile | Leu | Ser | Gln | Gln | Gln | Glu |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Leu | Glu | Phe | Leu | Leu | Thr | Tyr | Leu | Glu | Glu | Ser | Thr | Arg | Asp | Gln | Ser |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Gly | Leu | His | Tyr | Leu | Gln | Asp | Ala | Asp | Glu | Glu | His | Val | Glu | Ile | Ser |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Thr | Arg | Ser | Ala | Glu | Phe | | | | | | | | | | |
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<210> 4237

<211> 560

<212> DNA

<213> Homo sapiens

<400> 4237

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 120
 aattgtctcg ccagtgtcag gagcaggtag cggcattcct ggccatcctc ttcacccctc
 180
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 240
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 300
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 360
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<210> 4238

<211> 124

<212> PRT

<213> Homo sapiens

<400> 4238

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ala | Gln | Ala | Ser | Glu | Asn | Cys | Leu | Ala | Ser | Val | Arg | Ser | Arg | Tyr |
| 1 | | | 5 | | | | | 10 | | | | | | 15 | |
| Arg | His | Ser | Trp | Pro | Ser | Ser | Ser | Pro | Ser | Pro | His | Arg | Phe | Ser | Phe |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| His | Ser | Pro | Glu | Leu | Leu | Pro | Val | Pro | Ile | Leu | Asp | Ser | Leu | Ser | Cys |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Phe | Leu | Asp | Ser | Leu | Ser | Cys | Phe | Leu | Asp | Ser | Leu | Gln | Ile | Ala | Arg |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Ala | Met | Gly | Val | Ala | Asp | Glu | Ala | Leu | Gly | Asn | Val | Arg | Thr | Val | Arg |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ala | Phe | Ala | Met | Glu | Gln | Arg | Glu | Glu | Glu | Arg | Tyr | Gly | Ala | Glu | Leu |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| Glu | Ala | Cys | Arg | Cys | Arg | Ala | Glu | Glu | Leu | Gly | Arg | Gly | Ile | Ala | Leu |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| Phe | Gln | Gly | Leu | Ser | Asn | Ile | Ala | Phe | Asn | Cys | Glu | | | | |
| | | | 115 | | | | 120 | | | | | | | | |

<210> 4239

<211> 3127

<212> DNA

<213> Homo sapiens

<400> 4239

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660
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3127

<210> 4240

<211> 860

<212> PRT

<213> Homo sapiens

<400> 4240

Met Thr Glu Gly Thr Lys Lys Thr Ser Lys Lys Phe Lys Phe Phe Lys

3432

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| 450 | 455 | 460 |
| Lys Gly Pro His Thr Ser Pro Ser His Thr Leu Gly Lys Ala Ser Pro | | |
| 465 | 470 | 475 |
| Ser Pro Ser Leu Ser Ser Tyr Ser Asp Pro Asp Ser Gly His Tyr Cys | | |
| 485 | 490 | 495 |
| Gln Leu Gln Pro Pro Val Arg Gly Ser Arg Glu Trp Ala Ala Thr Glu | | |
| 500 | 505 | 510 |
| Thr Ser Ser Gln Gln Ala Arg Ser Tyr Gly Glu Arg Leu Lys Glu Leu | | |
| 515 | 520 | 525 |
| Ser Glu Asn Gly Ala Pro Glu Gly Asp Trp Gly Lys Thr Phe Thr Val | | |
| 530 | 535 | 540 |
| Pro Ile Val Glu Val Thr Ser Ser Phe Asn Pro Ala Thr Phe Gln Ser | | |
| 545 | 550 | 555 |
| Leu Leu Ile Pro Arg Asp Asn Arg Pro Leu Glu Val Gly Leu Leu Arg | | |
| 565 | 570 | 575 |
| Lys Val Lys Glu Leu Leu Ala Glu Val Asp Ala Arg Thr Leu Ala Arg | | |
| 580 | 585 | 590 |
| His Val Thr Lys Val Asp Cys Leu Val Ala Arg Ile Leu Gly Val Thr | | |
| 595 | 600 | 605 |
| Lys Glu Met Gln Thr Leu Met Gly Val Arg Trp Gly Met Glu Leu Leu | | |
| 610 | 615 | 620 |
| Thr Leu Pro His Gly Arg Gln Leu Arg Leu Asp Leu Leu Glu Arg Phe | | |
| 625 | 630 | 635 |
| His Thr Met Ser Ile Met Leu Ala Val Asp Ile Leu Gly Cys Thr Gly | | |
| 645 | 650 | 655 |
| Ser Ala Glu Glu Arg Ala Ala Leu Leu His Lys Thr Ile Gln Leu Ala | | |
| 660 | 665 | 670 |
| Ala Glu Leu Arg Gly Thr Met Gly Asn Met Phe Ser Phe Ala Ala Val | | |
| 675 | 680 | 685 |
| Met Gly Ala Leu Asp Met Ala Gln Ile Ser Arg Leu Glu Gln Thr Trp | | |
| 690 | 695 | 700 |
| Val Thr Leu Arg Gln Arg His Thr Glu Gly Ala Ile Leu Tyr Glu Lys | | |
| 705 | 710 | 715 |
| Lys Leu Lys Pro Phe Leu Lys Ser Leu Asn Glu Gly Lys Glu Gly Pro | | |
| 725 | 730 | 735 |
| Pro Leu Ser Asn Thr Thr Phe Pro His Val Leu Pro Leu Ile Thr Leu | | |
| 740 | 745 | 750 |
| Leu Glu Cys Asp Ser Ala Pro Pro Glu Gly Pro Glu Pro Trp Gly Ser | | |
| 755 | 760 | 765 |
| Thr Glu His Gly Val Glu Val Val Leu Ala His Leu Glu Ala Ala Arg | | |
| 770 | 775 | 780 |
| Thr Val Ala His His Gly Gly Leu Tyr His Thr Asn Ala Glu Val Lys | | |
| 785 | 790 | 795 |
| Leu Gln Gly Phe Gln Ala Arg Pro Glu Leu Leu Glu Val Phe Ser Thr | | |
| 805 | 810 | 815 |
| Glu Phe Gln Met Arg Leu Leu Trp Gly Ser Gln Gly Ala Ser Ser Ser | | |
| 820 | 825 | 830 |
| Gln Ala Arg Arg Tyr Glu Lys Phe Asp Lys Val Leu Thr Ala Leu Ser | | |
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| His Lys Leu Glu Pro Ala Val Arg Ser Ser Glu Leu | | |
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<210> 4241
 <211> 479
 <212> DNA
 <213> Homo sapiens

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<210> 4242
 <211> 159
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 35 40 45
 Gln Ser Lys Thr Gln Ser Asp Gly Ser Thr Leu Gln Gln Gly Ser Leu
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 Glu Phe Phe Ser Cys Leu Tyr Glu Ile Gln Glu Glu Glu Phe Ile Gln
 65 70 75 80
 Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn Ile Ala Ser
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 Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg Cys Arg Ser
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 Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala Asp Gly Glu
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<210> 4243
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<210> 4244

<211> 849

<212> PRT

<213> Homo sapiens

<400> 4244

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Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly
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Val Arg Val Ser Val Asn Val Leu Asn Lys Gln Lys Gly Ala Pro Leu
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Leu Phe Val Val Arg Gln Lys Glu Ala Val Val Ser Phe Gln Val Pro
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Leu Ile Leu Arg Gly Met Phe Gln Arg Lys Tyr Leu Tyr Gln Lys Val
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Gln Phe Ser Phe Asn Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr
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Glu Phe Pro Glu Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn
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Lys Ala Phe Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro
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Val Tyr Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr
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Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
      290          295          300
Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
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Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
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Glu Ser Ala Ser Leu Leu Gly His Pro Arg Val Leu Ala Asp Ser Phe
      340          345          350
Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn
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Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp

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 705 710 715 720
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 785 790 795 800
 Thr Pro Ala Glu Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 805 | | | | | 810 | | | | 815 | | | |
| Phe | Phe | Asp | Asp | His | Asp | Ile | Trp | His | Phe | Leu | Ser | Ser | Ile | Ala | Met |
| | | | 820 | | | | | 825 | | | | 830 | | | |
| Phe | Gly | Ser | Phe | Leu | Val | Ser | Gly | Pro | Pro | Gly | Ala | Ala | Leu | Arg | Ile |
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<211> 909

<212> DNA

<213> Homo sapiens

<400> 4245

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<210> 4246

<211> 303

<212> PRT

<213> Homo sapiens

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| Asn Ala Gly Glu Glu Cys Lys Ser Leu Arg Gly Gln Leu Glu Glu Gln | | | |
| 35 | 40 | 45 | |
| Gly Arg Gln Leu Gln Ala Ala Glu Glu Ala Val Glu Lys Leu Lys Ala | | | |
| 50 | 55 | 60 | |
| Thr Gln Ala Asp Met Gly Glu Lys Leu Ser Cys Thr Ser Asn His Leu | | | |
| 65 | 70 | 75 | 80 |
| Ala Glu Cys Gln Ala Ala Met Leu Arg Lys Asp Lys Glu Gly Ala Ala | | | |
| 85 | 90 | 95 | |
| Leu Arg Glu Asp Leu Glu Arg Thr Gln Lys Glu Leu Glu Lys Ala Thr | | | |
| 100 | 105 | 110 | |
| Thr Lys Ile Gln Glu Tyr Tyr Asn Lys Leu Cys Gln Glu Val Thr Asn | | | |
| 115 | 120 | 125 | |
| Arg Glu Arg Asn Asp Gln Lys Met Leu Ala Asp Leu Asp Asp Leu Asn | | | |
| 130 | 135 | 140 | |
| Arg Thr Lys Lys Tyr Leu Glu Glu Arg Leu Ile Glu Leu Leu Arg Asp | | | |
| 145 | 150 | 155 | 160 |
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| 165 | 170 | 175 | |
| Leu Ser Ala Glu Glu Arg Trp Leu Gly Asp Thr Glu Ala Asn His Cys | | | |
| 180 | 185 | 190 | |
| Leu Asp Cys Lys Arg Glu Phe Ser Trp Met Val Arg Arg His His Cys | | | |
| 195 | 200 | 205 | |
| Arg Ile Cys Gly Arg Ile Phe Cys Tyr Tyr Cys Cys Asn Asn Tyr Val | | | |
| 210 | 215 | 220 | |
| Leu Ser Lys His Gly Gly Lys Lys Glu Arg Cys Cys Arg Ala Cys Phe | | | |
| 225 | 230 | 235 | 240 |
| Gln Lys Leu Ser Glu Gly Pro Gly Ser Pro Asp Ser Ser Gly Ser Gly | | | |
| 245 | 250 | 255 | |
| Thr Ser Gln Gly Glu Leu Ser Pro Ala Leu Ser Pro Ala Ser Pro Gly | | | |
| 260 | 265 | 270 | |
| Pro Gln Ala Thr Gly Gly Gln Gly Ala Asn Thr Asp Tyr Arg Pro Pro | | | |
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<211> 5755

<212> DNA

<213> Homo sapiens

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<210> 4248

<211> 1297

<212> PRT

<213> Homo sapiens

<400> 4248

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Glu | Asp | Arg | Arg | Gly | Ala | Pro | Ala | Gly | Ala | Thr | Ser | Phe | Pro | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ala | Pro | Ser | Pro | Leu | Pro | Leu | His | Thr | His | Ala | Arg | Ser | Leu | Ala | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Arg | Thr | Pro | Pro | Ala | Pro | Asp | Pro | His | Leu | Gly | Gly | Arg | His | Thr |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Leu | Gly | Ser | Pro | Ser | Arg | Gly | Ser | Arg | Ser | Gly | Met | Glu | Ala | Ala | Arg |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Thr | Glu | Arg | Pro | Ala | Gly | Arg | Pro | Gly | Ala | Pro | Leu | Val | Arg | Thr | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Leu | Leu | Leu | Leu | Ser | Thr | Trp | Val | Leu | Ala | Gly | Ala | Glu | Ile | Thr | Trp |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asp | Ala | Thr | Gly | Gly | Pro | Gly | Arg | Pro | Ala | Ala | Pro | Ala | Ser | Arg | Pro |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Pro | Ala | Leu | Ser | Pro | Leu | Ser | Pro | Arg | Ala | Val | Ala | Ser | Gln | Trp | Pro |
| | 130 | | | | | | 135 | | | | 140 | | | | |
| Glu | Glu | Leu | Ala | Ser | Ala | Arg | Arg | Ala | Ala | Val | Leu | Gly | Arg | Arg | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Gly | Pro | Glu | Leu | Leu | Pro | Gln | Gln | Gly | Gly | Gly | Arg | Gly | Gly | Glu | Met |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Gln | Val | Glu | Ala | Gly | Gly | Thr | Ser | Pro | Ala | Gly | Glu | Arg | Arg | Gly | Arg |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Ile | Pro | Ala | Pro | Ala | Lys | Leu | Gly | Gly | Ala | Arg | Arg | Ser | Arg | Arg |
| | | 195 | | | | | 200 | | | | | | 205 | | |
| Ala | Gln | Pro | Pro | Ile | Thr | Gln | Glu | Arg | Gly | Asp | Ala | Trp | Ala | Thr | Ala |

| | | |
|-------------------------|---|-----------------------------|
| 210 | 215 | 220 |
| Pro Ala Asp Gly Ser Arg | Gly Ser Arg | Pro Leu Ala Lys Gly Ser Arg |
| 225 | 230 | 235 |
| Glu Glu Val Lys Ala Pro | Arg Ala Gly Gly Ser Ala Ala Glu Asp Leu | 240 |
| 245 | 250 | 255 |
| Arg Leu Pro Ser Thr Ser | Phe Ala Leu Thr Gly Asp Ser Ala His Asn | 260 |
| 260 | 265 | 270 |
| Gln Ala Met Val His Trp | Ser Gly His Asn Ser Ser Val Ile Leu Ile | 275 |
| 275 | 280 | 285 |
| Leu Thr Lys Leu Tyr Asp | Phe Asn Leu Gly Ser Val Thr Glu Ser Ser | 290 |
| 290 | 295 | 300 |
| Leu Trp Arg Ser Thr Asp | Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp | 305 |
| 305 | 310 | 315 |
| Lys Val Gly Leu Lys Thr | Val Leu Ser Tyr Leu Tyr Val Asn Pro Thr | 320 |
| 325 | 330 | 335 |
| Asn Lys Arg Lys Ile Met | Leu Leu Ser Asp Pro Glu Met Glu Ser Ser | 340 |
| 340 | 345 | 350 |
| Ile Leu Ile Ser Ser Asp | Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu | 355 |
| 355 | 360 | 365 |
| Thr Phe Tyr Ile Gln Ser | Leu Leu Phe His Pro Lys Gln Glu Asp Trp | 370 |
| 370 | 375 | 380 |
| Val Leu Ala Tyr Ser Leu | Asp Gln Lys Leu Tyr Ser Ser Met Asp Phe | 385 |
| 385 | 390 | 395 |
| Gly Arg Arg Trp Gln Leu | Met His Glu Arg Ile Thr Pro Asn Arg Phe | 400 |
| 405 | 410 | 415 |
| Tyr Trp Ser Val Ala Gly | Leu Asp Lys Glu Ala Asp Leu Val His Met | 420 |
| 420 | 425 | 430 |
| Glu Val Arg Thr Thr Asp | Gly Tyr Ala His Tyr Leu Thr Cys Arg Ile | 435 |
| 435 | 440 | 445 |
| Gln Glu Cys Ala Glu Thr | Thr Arg Ser Gly Pro Phe Ala Arg Ser Ile | 450 |
| 450 | 455 | 460 |
| Asp Ile Ser Ser Leu Val | Gln Asp Glu Tyr Ile Phe Ile Gln Val | 465 |
| 465 | 470 | 475 |
| Thr Thr Ser Gly Arg Ala | Ser Tyr Tyr Val Ser Tyr Arg Arg Glu Ala | 480 |
| 485 | 490 | 495 |
| Phe Ala Gln Ile Lys Leu | Pro Lys Tyr Ser Leu Pro Lys Asp Met His | 500 |
| 500 | 505 | 510 |
| Ile Ile Ser Thr Asp Glu | Asn Gln Val Phe Ala Ala Val Gln Glu Trp | 515 |
| 515 | 520 | 525 |
| Asn Gln Asn Asp Thr Tyr | Asn Leu Tyr Ile Ser Asp Thr Arg Gly Ile | 530 |
| 530 | 535 | 540 |
| Tyr Phe Thr Leu Ala Met | Glu Asn Ile Lys Ser Ser Arg Gly Leu Met | 545 |
| 545 | 550 | 555 |
| Gly Asn Ile Ile Ile Glu | Leu Tyr Glu Val Ala Gly Ile Lys Gly Ile | 560 |
| 565 | 570 | 575 |
| Phe Leu Ala Asn Lys Lys | Val Asp Asp Gln Val Lys Thr Tyr Ile Thr | 580 |
| 580 | 585 | 590 |
| Tyr Asn Lys Gly Arg Asp | Trp Arg Leu Leu Gln Ala Pro Asp Val Asp | 595 |
| 595 | 600 | 605 |
| Leu Arg Gly Ser Pro Val | His Cys Leu Leu Pro Phe Cys Ser Leu His | 610 |
| 610 | 615 | 620 |
| Leu His Leu Gln Leu Ser | Glu Asn Pro Tyr Ser Ser Gly Arg Ile Ser | 625 |
| 625 | 630 | 635 |
| Ser Lys Glu Thr Ala Pro | Gly Leu Val Val Ala Thr Gly Asn Ile Gly | 640 |

3446

1075 1080 1085
 His Asn Pro Asp Ile Pro Glu Trp Arg Lys Asp Ile Gly Asn Val Ile
 1090 1095 1100
 Lys Arg Ala Leu Val Lys Val Thr Ser Val Pro Glu Asp Gln Ile Leu
 1105 1110 1115 1120
 Ile Ala Val Phe Pro Gly Leu Pro Thr Ser Ala Glu Leu Phe Ile Leu
 1125 1130 1135
 Pro Pro Lys Asn Leu Thr Glu Arg Arg Lys Gly Asn Glu Gly Asp Leu
 1140 1145 1150
 Glu Gln Ile Val Glu Thr Leu Phe Asn Ala Leu Asn Gln Asn Leu Val
 1155 1160 1165
 Gln Phe Glu Leu Lys Pro Gly Val Gln Val Ile Val Tyr Val Thr Gln
 1170 1175 1180
 Leu Thr Leu Ala Pro Leu Val Asp Ser Ser Ala Gly His Ser Ser Ser
 1185 1190 1195 1200
 Ala Met Leu Met Leu Leu Ser Val Val Phe Val Gly Leu Ala Val Phe
 1205 1210 1215
 Leu Ile Tyr Lys Phe Lys Arg Lys Ile Pro Trp Ile Asn Ile Tyr Ala
 1220 1225 1230
 Gln Val Gln His Asp Lys Glu Gln Glu Met Ile Gly Ser Val Ser Gln
 1235 1240 1245
 Ser Glu Asn Ala Pro Lys Ile Thr Leu Ser Asp Phe Thr Glu Pro Glu
 1250 1255 1260
 Glu Leu Leu Asp Lys Glu Leu Asp Thr Arg Val Ile Gly Gly Ile Ala
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 1285 1290 1295
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 <211> 553
 <212> DNA
 <213> Homo sapiens

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<212> PRT
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35 40 45
Arg Asn Ala Ser Gly Ile Asn Pro Arg Val Pro Gly Pro Gln Glu Gly
50 55 60
Ser Ile Ile Gly Pro Gln Thr Arg Arg Lys Ser Ser Leu Leu Lys Pro
65 70 75 80
Thr Leu Ile Ser Glu Pro Ala Asp Met Gly Thr Gln Gln Phe Leu Gln
85 90 95
Leu Asn Pro Asn Leu Gln Lys Phe Ser Arg Asp Met Glu Asp Val Lys
100 105 110
Gly Thr Pro Ser Lys Pro Leu Glu Asn Tyr Asn Met Leu Ala Gly Leu
115 120 125
Gly Gly Ser Arg Val Ser Ser Gln His Phe Gly Arg Leu Arg Gln Glu
130 135 140
Asp Arg Leu Ser Pro Gly Val Gln Asp Gln Pro Gly Pro His Ser Glu
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Thr Pro Ile Ser

<210> 4251
<211> 1574
<212> DNA
<213> Homo sapiens

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gggggggggc caggccctaa ccccatattat ttcattccac agatgagggc aaccttaaga
180
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420
cgcccccttc ccactcacca cccccacccc aggtgctggg ggtcccttat ttttatgcaa
480

taactgagct tgatgggggt gggcaggggg ccagttgagc caatcaccag cctccatata
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 600
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<210> 4252

<211> 352

<212> PRT

<213> Homo sapiens

<400> 4252

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Val | Gly | Arg | Gly | Pro | Val | Glu | Pro | Ile | Thr | Ser | Leu | His | Ile |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Thr | Asp | Pro | Asp | Pro | Glu | Ser | Gln | Glu | Leu | Gln | Ile | Gly | Gly | Thr | Cys |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Pro | Asp | Ile | Thr | Lys | Arg | Tyr | Leu | Arg | Leu | Thr | Cys | Ala | Pro | Asp | Pro |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ser | Thr | Val | Arg | Pro | Val | Ala | Val | Leu | Lys | Lys | Ser | Leu | Cys | Met | Val |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Cys | His | Trp | Lys | Glu | Lys | Gln | Asp | Tyr | Ala | Phe | Ala | Cys | Glu | Gln |

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<210> 4253
<211> 1287
<212> DNA
<213> Homo sapiens
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120
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180
tgctctggcc atggaatgaa gcagaaacga aagcctgcc a gttctgagcc tatgccggaa
240
gacgccttg gcggttcgc ggtccctgtg cgcttcacc ttcaccaga aggacttctc
300
tggtgcagcc gctgcttctt cagccacggc caaaaggat cggagcccc tggccgatcc
360

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480
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540
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780
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900
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1080
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1140
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1287

<210> 4254

<211> 114

<212> PRT

<213> Homo sapiens

<400> 4254

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Ser | Leu | Trp | Val | Glu | Gly | Thr | Phe | Pro | Pro | Pro | Gly | Phe | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Leu | Ala | His | Val | Ala | Cys | Ser | Gly | His | Gly | Met | Lys | Gln | Lys | Arg | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Ala | Ser | Ser | Glu | Pro | Met | Pro | Glu | Asp | Ala | Leu | Gly | Gly | Ser | Ala |
| | | | 35 | | | | | 40 | | | | | 45 | | |
| Val | Pro | Val | Arg | Phe | His | Leu | His | Pro | Glu | Gly | Leu | Leu | Trp | Cys | Ser |
| | | | 50 | | | | 55 | | | | | 60 | | | |
| Arg | Cys | Phe | Phe | Ser | His | Gly | Pro | Lys | Gly | Ser | Glu | Pro | Pro | Gly | Arg |
| | | | | | | 70 | | | | 75 | | | | 80 | |
| Ser | Ala | Gly | Leu | Gln | Gly | Ala | Thr | Glu | Arg | Ser | Gly | Arg | Pro | Ser | Val |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Gln | Ala | Gln | Ala | Gln | Ala | Cys | Glu | Asn | Leu | Val | Pro | Ala | Thr | Val | Trp |
| | | | | 100 | | | | 105 | | | | | | 110 | |
| Asp | Gly | | | | | | | | | | | | | | |

<210> 4255

<211> 2205

<212> DNA

<213> Homo sapiens

<400> 4255

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480
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540
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<210> 4256

<211> 384

<212> PRT

<213> Homo sapiens

<400> 4256

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Ser | Leu | Asn | Thr | Tyr | Ile | Val | Arg | Arg | Cys | Ile | Ala | Thr | Pro | Asn |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Gly | Val | Leu | Arg | Ile | Tyr | Ser | Gly | Ser | Leu | Met | Gly | Gln | Ala | Leu | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Pro | Thr | Arg | Lys | Gln | Trp | Tyr | Leu | His | Ala | Val | Ala | Asn | Pro | Gly | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ile | Ser | Leu | Thr | Gly | Pro | Tyr | Leu | Asp | Val | Gly | Gly | Ala | Gly | Tyr | Val |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Val | Thr | Ile | Ser | His | Thr | Ile | His | Ser | Ser | Ser | Thr | Gln | Leu | Ser | Ser |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | His | Thr | Val | Ala | Val | Met | Gly | Ile | Asp | Phe | Thr | Leu | Arg | Tyr | Phe |
| | | 100 | | | | | 105 | | | | | 110 | | | |
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| Asn | Lys | Ile | Arg | Cys | Phe | Ile | Met | Glu | Asp | Arg | Gly | Tyr | Leu | Val | Ala |
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| His | Pro | Thr | Leu | Ile | Asp | Pro | Lys | Gly | His | Ala | Pro | Val | Glu | Gln | Gln |

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Val Gln Arg Phe Tyr Lys Phe Asn Thr Ser Leu Ala Gly Asp Leu Thr
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Asn Leu Val His Gly Ser His Cys Ser Lys Tyr Arg Leu Ala Arg Ile
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225          230          235          240
Leu Ala Phe Cys Ala Cys Ser Met Val Asp Arg Leu Cys Leu Asn Cys
          245          250          255
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Glu Val Asn Glu Cys Thr Gly Asn Leu Thr Asn Ala Glu Asn Arg Asn
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          290          295          300
Pro Gly Leu Gln Asp Ala Leu His Gln Cys Val Asn Ser Arg Cys Ser
305          310          315          320
Gln Arg Leu Glu Ser Gly Asp Cys Phe Gly Val Leu Asp Cys Glu Trp
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Cys Met Val Asp Ser Asp Gly Lys Thr His Leu Asp Lys Pro Tyr Cys
          340          345          350
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<210> 4257

<211> 1541

<212> DNA

<213> Homo sapiens

<400> 4257

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540

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<210> 4258

<211> 314

<212> PRT

<213> Homo sapiens

<400> 4258

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| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Asp | Gln | Ser | Pro | Gly | Lys | His | Met | Val | Thr | Met | Asp | Gly | Val | Arg | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Asp | Leu | Ala | Pro | Phe | Ser | Leu | Arg | Lys | Arg | Trp | Glu | Ser | Glu | Pro |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| His | Pro | Tyr | Val | Phe | Phe | Asn | Asp | Asp | His | Thr | Thr | Met | Thr | Phe | Ile |
| | | | 50 | | | 55 | | | | 60 | | | | | |
| Gly | Phe | His | Leu | Gln | Pro | Asn | Ile | Asn | Gly | Ser | Val | Asp | Ala | Ile | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| His | Leu | Thr | Gly | Lys | Val | Ile | Lys | Arg | Asp | Val | Met | Thr | Arg | Asp | Leu |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Tyr | Gln | Gly | Leu | Leu | Leu | Gln | Arg | Val | Pro | Phe | Asn | Val | Asp | Phe | Asp |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Lys | Leu | Pro | Arg | His | Lys | Lys | Leu | Glu | Arg | Leu | Cys | Leu | Thr | Leu | Gly |
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| Ile | Pro | Gln | Ala | Thr | Asp | Pro | Asp | Lys | Thr | Tyr | Glu | Leu | Thr | Thr | Asp |
| | 130 | | | | | | 135 | | | | | 140 | | | |
| Asn | Met | Leu | Lys | Ile | Leu | Ala | Ile | Glu | Met | Arg | Phe | Arg | Cys | Gly | Ile |
| | 145 | | | | | 150 | | | | 155 | | | | | 160 |
| Pro | Val | Ile | Ile | Met | Gly | Glu | Thr | Gly | Cys | Gly | Lys | Thr | Arg | Leu | Ile |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Lys | Phe | Leu | Ser | Asp | Leu | Arg | Arg | Gly | Gly | Thr | Asn | Ala | Asp | Thr | Ile |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Lys | Leu | Val | Lys | Val | His | Gly | Gly | Thr | Thr | Ala | Asp | Met | Ile | Tyr | Ser |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Arg | Val | Arg | Glu | Ala | Glu | Asn | Val | Ala | Phe | Ala | Asn | Lys | Asp | Gln | His |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Gln | Leu | Asp | Thr | Ile | Leu | Phe | Phe | Asp | Glu | Ala | Asn | Thr | Thr | Glu | Ala |
| | 225 | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Ser | Cys | Ile | Lys | Glu | Val | Leu | Cys | Asp | His | Met | Val | Asp | Gly | Gln |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Leu | Ala | Glu | Asp | Ser | Gly | Leu | His | Ile | Ile | Ala | Ala | Cys | Asn | Pro |
| | | 260 | | | | | | 265 | | | | | 270 | | |
| Tyr | Pro | Glu | Asn | Ser | Glu | Glu | Met | Ile | Cys | Arg | Leu | Glu | Ser | Ala | Gly |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Leu | Gly | Tyr | Arg | Val | Ser | Met | Glu | Glu | Thr | Ala | Asp | Arg | Leu | Gly | Ser |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ile | Pro | Leu | Gly | Tyr | Thr | Cys | Thr | Gln | Arg | | | | | | |
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<400> 4260

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          35           40           45
Arg Ala Gly Asp Ala Phe Cys Arg Asp Cys Phe Lys Ala Phe Tyr Val
          50           55           60
His Lys Phe Arg Ala Met Leu Gly Lys Asn Arg Leu Ile Phe Pro Gly
65           70           75           80
Glu Lys Val Leu Leu Ala Trp Ser Gly Gly Pro Ser Ser Ser Ser Met
          85           90           95
Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser Ala Lys Arg Leu
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Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly Ala
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<210> 4261

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<400> 4261

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<210> 4262

<211> 156

<212> PRT

<213> Homo sapiens

<400> 4262

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 20 | | 25 | | 30 | | | | | | | | | | |
| Gly | Ala | Phe | Leu | Ile | Asp | Arg | Ser | Pro | Glu | Tyr | Phe | Glu | Pro | Ile | Leu |
| | 35 | | 40 | | 45 | | | | | | | | | | |
| Asn | Tyr | Leu | Arg | His | Gly | Gln | Leu | Ile | Val | Asn | Asp | Gly | Ile | Asn | Leu |
| | 50 | | 55 | | 60 | | | | | | | | | | |
| Leu | Gly | Val | Leu | Glu | Glu | Ala | Arg | Phe | Phe | Gly | Ile | Asp | Ser | Leu | Ile |
| 65 | | | 70 | | 75 | | | | | | | | | 80 | |
| Glu | His | Leu | Glu | Val | Ala | Ile | Lys | Asn | Ser | Gln | Pro | Pro | Glu | Asp | His |
| | | | 85 | | 90 | | | | | | | | | 95 | |
| Ser | Pro | Ile | Ser | Arg | Lys | Glu | Phe | Val | Arg | Phe | Leu | Leu | Ala | Thr | Pro |
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Thr | Lys | Ser | Glu | Leu | Arg | Cys | Gln | Gly | Leu | Asn | Phe | Ser | Gly | Ala | Asp |
| | 115 | | 120 | | 125 | | | | | | | | | | |
| Leu | Ser | Arg | Leu | Asp | Leu | Arg | Tyr | Ile | Asn | Phe | Lys | Met | Ala | Asn | Leu |
| | 130 | | 135 | | 140 | | | | | | | | | | |
| Ser | Arg | Cys | Asn | Leu | Ala | His | Ala | Asn | Leu | Cys | Cys | | | | |
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<212> DNA

<213> Homo sapiens

<400> 4263

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| Gln Ala Glu Pro Glu Ser Val Leu Leu Val His Gly Glu Ala Lys Lys | | | |
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<213> Homo sapiens

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| Ala | Ile | Phe | Ile | Asn | Ile | Lys | Glu | His | Ile | Arg | Lys | Gly | Ser | Ile | Val |
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<213> Homo sapiens

<400> 4273
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<212> PRT

<213> Homo sapiens

<400> 4274

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| Met | Ser | Ser | Cys | Pro | Cys | Ser | Thr | Trp | Pro | Met | Trp | Asp | Thr | Ser | Asp |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Glu | Ser | Ile | Arg | Ala | His | Val | Met | Ala | Ser | His | His | Ser | Lys | Arg |
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| Arg | Gly | Arg | Ala | Ser | Ser | Glu | Ser | Gln | Gly | Leu | Gly | Ala | Gly | Val | Arg |
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| Thr | Glu | Xaa | Asp | Val | Glu | Glu | Ala | Leu | Arg | Arg | Lys | Leu | Glu | Glu | |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Leu | Thr | Ser | Asn | Val | Ser | Asp | Gln | Glu | Thr | Phe | Val | Arg | Gly | Gly | Gly |
| | | | 85 | | | | | 90 | | | | | 95 | | |
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| | | | 100 | | | | | 105 | | | | | 110 | | |
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| Gln | Thr | Gly | Lys | Lys | Pro | Gln | Asp | Pro | Gly | Asp | Pro | Val | Gln | Tyr | Asn |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Arg | Thr | Thr | Asp | Glu | Glu | Leu | Ser | Glu | Leu | Glu | Asp | Arg | Val | Ala | Val |
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| Thr | Ala | Ser | Glu | Val | Gln | Gln | Ala | Glu | Ser | Glu | Val | Ser | Asp | Ile | Glu |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Ser | Arg | Ile | Ala | Ala | Leu | Arg | Ala | Ala | Gly | Leu | Thr | Val | Lys | Pro | Ser |
| | | | 180 | | | | 185 | | | | | | 190 | | |
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| Ala | Gly | Lys | Leu | Gly | Lys | Arg | Pro | Glu | Asp | Pro | Asn | Ala | Asp | Pro | Ser |
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<211> 874

<212> DNA

<213> Homo sapiens

<400> 4275

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<210> 4276

<211> 264

<212> PRT

<213> Homo sapiens

<400> 4276

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 35 40 45
 Val Ser Pro Glu Pro Gly Thr Thr Arg Asp Val Leu Glu Thr Pro Val
 50 55 60
 Asp Leu Ala Gly Phe Pro Val Leu Leu Ser Asp Thr Ala Gly Leu Arg

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Glu | Gly | Val | Gly | Pro | Val | Glu | Gln | Glu | Gly | Val | Arg | Arg | Ala | Arg | Glu |
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| Arg | Leu | Glu | Gln | Ala | Asp | Leu | Ile | Leu | Ala | Met | Leu | Asp | Ala | Ser | Asp |
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| Leu | Ala | Ser | Pro | Ser | Ser | Cys | Asn | Phe | Leu | Ala | Thr | Val | Val | Ala | Ser |
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| Val | Gly | Ala | Gln | Ser | Pro | Ser | Asp | Ser | Ser | Gln | Arg | Leu | Leu | Leu | Val |
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| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Asp | Leu | Pro | Pro | His | Leu | Leu | Leu | Ser | Cys | Leu | Thr | Gly | Glu | Gly | Leu |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Asp | Gly | Leu | Leu | Glu | Ala | Leu | Arg | Lys | Glu | Leu | Ala | Ala | Val | Cys | Gly |
| | | 180 | | | | | | 185 | | | | | 190 | | |
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| His | Leu | Gln | Gly | Cys | Leu | Asp | Ala | Leu | Gly | His | Tyr | Lys | Gln | Ser | Lys |
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| Thr | Arg | Leu | Thr | Gly | Gly | Gly | Gly | Thr | Glu | Glu | Ile | Leu | Asp | Ile | Ile |
| | | | 245 | | | | | 250 | | | | | | 255 | |
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<210> 4278

<211> 253

<212> PRT

<213> Homo sapiens

<400> 4278

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| Glu | Asn | Ser | Arg | Pro | Arg | Arg | Ser | Cys | Thr | Leu | Glu | Gly | Gly | Ala | Lys |
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| Lys | Lys | Lys | Ser | Arg | Tyr | Glu | Arg | Thr | Asp | Thr | Gly | Glu | Ile | Thr | Ser |
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| Tyr | Ile | Thr | Glu | Asp | Asp | Val | Val | Tyr | Arg | Pro | Gly | Asp | Cys | Val | Tyr |
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| Pro | Ala | Leu | Cys | Asp | Pro | Pro | Ala | Cys | Ser | Leu | Pro | Val | Ala | Ser | Gln |
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| Pro | Pro | Gln | His | Leu | Ser | Glu | Ala | Gly | Arg | Gly | Pro | Val | Gly | Ser | Lys |
| | | | 165 | | | | | 170 | | | | | 175 | | |
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| Val | Pro | Asp | Ser | Val | Tyr | Gln | His | Leu | Val | Gln | Asp | Arg | His | Asn | Glu |
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| Arg | Glu | Leu | Phe | Ile | Ser | Asp | Tyr | Val | Asp | Thr | Tyr | His | Ala | Ala | Ala |
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<213> Homo sapiens

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<211> 575

<212> PRT

<213> Homo sapiens

<400> 4280

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| Met | Met | Tyr | Ser | Leu | Ser | Val | His | Gln | Gln | Leu | Gly | Lys | Met | Val | Gly |
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| Val | Ser | Asp | Asp | Val | Asn | Glu | Tyr | Ala | Met | Ala | Leu | Arg | Asp | Thr | Glu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Lys | Leu | Arg | Arg | Cys | Pro | Lys | Arg | Arg | Lys | Asp | Ile | Leu | Ala | Glu |
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| Leu | Thr | Lys | Ser | Gln | Lys | Val | Phe | Ser | Glu | Lys | Leu | Asp | His | Leu | Ser |
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| Arg | Arg | Leu | Ala | Trp | Val | His | Ala | Thr | Val | Tyr | Ser | Gln | Glu | Lys | Met |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Asp | Ile | Tyr | Trp | Leu | Leu | Arg | Val | Cys | Leu | Arg | Thr | Ile | Glu | His |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Gly | Asp | Arg | Thr | Gly | Ser | Leu | Phe | Ala | Phe | Met | Pro | Glu | Phe | Tyr | Leu |
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| Val | His | Ser | Met | Glu | Glu | Leu | Pro | Gly | Tyr | Glu | Glu | Thr | Leu | Thr | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Leu | Ala | Ala | Ile | Leu | Ala | Lys | His | Phe | Ala | Asp | Ala | Arg | Ile | Val | Gly |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Thr | Asp | Ile | Arg | Asp | Ser | Leu | Met | Gln | Ala | Leu | Ala | Ser | Tyr | Val | Cys |
| | | 180 | | | | | | 185 | | | | 190 | | | |
| Tyr | Pro | His | Ser | Leu | Arg | Ala | Val | Glu | Arg | Ile | Pro | Glu | Glu | Gln | Arg |
| | | 195 | | | | 200 | | | | | 205 | | | | |
| Ile | Ala | Met | Val | Arg | Asn | Leu | Leu | Ala | Pro | Tyr | Glu | Gln | Arg | Pro | Trp |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ala | Gln | Thr | Asn | Trp | Ile | Leu | Val | Arg | Leu | Trp | Arg | Gly | Cys | Gly | Phe |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
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atgccccata gtctcagccc acctctcttc tgccatgagt cccctgattc tgtcctttga
120
gctgactctg agaggcagtg ggcttccgc cagcacctcc ccctatcaca ttgttagggc
180
```

tggtttatga ggccggaagt aagcaagcac cccctcatat caacctggca cttcacaccc
 240
 cccatgggta tcagtggggg tgctggctgg ctggcaggca gccagagaca tttcagcagg
 300
 tcaggcatgg atgcagggtg aaatgagaga ggatcagtga gcgcattcat gtcttttgag
 360
 tgggtctacag atgagtgggtc tccagtctca aatgaggaga acaaataggg aagtaggagc
 420
 tcagggttct tgtgtgtctc ataggcagct gcctatccct ggggtgataca gctccctggc
 480
 acaccattc ccaagggcac aggatcc
 507

<210> 4282

<211> 106

<212> PRT

<213> Homo sapiens

<400> 4282

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ala | Leu | Thr | Asp | Pro | Leu | Ser | Phe | Pro | Pro | Ala | Ser | Met | Pro |
| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Asp | Leu | Leu | Lys | Cys | Leu | Trp | Leu | Pro | Ala | Ser | Gln | Pro | Ala | Pro | Pro |
| | 20 | | | | | 25 | | | | | 30 | | | | |
| Leu | Ile | Thr | Met | Gly | Gly | Val | Lys | Cys | Gln | Val | Asp | Met | Arg | Gly | Cys |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Leu | Leu | Thr | Ser | Gly | Leu | Ile | Asn | Gln | Pro | Tyr | Lys | Cys | Asp | Arg | Gly |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Arg | Cys | Trp | Arg | Glu | Ala | His | Cys | Leu | Ser | Glu | Ser | Ala | Gln | Arg | Thr |
| 65 | | | | 70 | | | | | 75 | | | | 80 | | |
| Glu | Ser | Gly | Asp | Ser | Trp | Gln | Lys | Arg | Gly | Gly | Leu | Arg | Leu | Trp | Gly |
| | 85 | | | | | | 90 | | | | 95 | | | | |
| Ile | Trp | Pro | Ile | Gly | Gln | Leu | Trp | Gly | Ser | | | | | | |
| | 100 | | | | | | 105 | | | | | | | | |

<210> 4283

<211> 315

<212> DNA

<213> Homo sapiens

<400> 4283

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 cgaccgtttt cctagaaggc ctaaccgctc aaacgggcag gggagggggg cgggcggccc
 120
 gggagaaacc gaggccccgc cgggtcccca ccgtgtggcg ccgaccgaaa taactccagt
 180
 ccagctgcaa aaacctccc gaaaacccaa gcttgtccgg cacaacttcg gtctctccag
 240
 cctcattcct gcccgcactc cgccaaactg ctgcacctgc ccagcgcagc ggatgcagcg
 300
 ctcccggccc nacgg
 315

<210> 4284

<211> 91
 <212> PRT
 <213> Homo sapiens

<400> 4284
 Met Gly Cys Pro Ser Ala Ala Asp Arg Phe Pro Arg Arg Pro Asn Arg
 1 5 10 15
 Ser Asn Gly Gln Gly Arg Gly Ala Gly Gly Pro Gly Glu Thr Glu Ser
 20 25 30
 Pro Pro Gly Pro His Arg Val Ala Pro Thr Glu Ile Thr Pro Val Gln
 35 40 45
 Leu Gln Lys Pro Ser Arg Lys Pro Lys Leu Val Arg His Asn Phe Gly
 50 55 60
 Leu Ser Ser Leu Ile Pro Ala Arg Thr Pro Pro Asn Cys Ser Pro Cys
 65 70 75 80
 Pro Ala Gln Arg Met Gln Arg Ser Arg Pro Xaa
 85 90

<210> 4285
 <211> 591
 <212> DNA
 <213> Homo sapiens

<400> 4285
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 60
 aaaatcctga ccaagatgaa gcagcagggt catgagacag ccgcctgtcc ggagactgaa
 120
 gagataccgc agggagccag tggctgctgg aaggatgacc tccagaagga actgagtgat
 180
 atatggtgat gccagcctg cagtctgacc cctgaccctc ctctgaacct gttcccccaa
 240
 cgggatctgg cagtgaccac cagaacctgg agcccacctg agtccagact tccctcaccc
 300
 cctaggactc accccaccac ggcccccaac cttagctgta ctgctgtcta caccctgagc
 360
 agtgtggagt ctcccagcgc cccagctcc ttgtcttctt gcaggtctgc tgtgcacgtg
 420
 ctgcaggact ccatagacag cctcactttg tgctcggggg cctgtcccaa ggcctcgagc
 480
 ctaagaggcc acaagggcac cagtgcctga gccctccact cccctcctgg gactctgact
 540
 ccgactgtga ccaggacctc tccagccac ctttcagcaa gagcggccgc a
 591

<210> 4286
 <211> 106
 <212> PRT
 <213> Homo sapiens

<400> 4286
 Cys Pro Ala Cys Ser Leu Thr Pro Asp Pro Pro Leu Asn Pro Phe Pro
 1 5 10 15
 Gln Arg Asp Leu Ala Val Thr Thr Arg Thr Trp Ser Pro Pro Glu Ser

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<210> 4288
<211> 240
<212> PRT
<213> Homo sapiens
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<400> 4288

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Met Arg Val Ala Thr Lys Ser Gly Arg Lys Arg Trp Leu Lys Ala Thr
 1           5           10           15
Thr Met Lys Asn Ser Val Arg Leu Val Ala Met Ala Pro Ser Pro Ala
          20           25           30
Leu Thr Ser Ile Ser Ser Glu Pro Ser Glu Ala Trp Val Gln Ala Phe
          35           40           45
Ala Ser Tyr Arg Met Ser Pro Gly Asn Trp Lys Thr Xaa Val Leu Ala
          50           55           60
Gln Thr Leu Val Glu Ala Leu Gln Leu Asp Pro Glu Thr Leu Ala Asn
65           70           75           80
Glu Thr Ala Ala Arg Ala Ala Asn Val Ala Arg Ala Ala Ala Ser Asn
          85           90           95
Arg Ala Ala Arg Ala Ala Ala Ala Ala Arg Thr Ala Phe Ser Gln
          100          105          110
Val Val Ala Ser His Arg Val Ala Thr Pro Gln Val Ser Gly Glu Asp
          115          120          125
Thr Gln Pro Thr Thr Tyr Ala Ala Glu Ala Gln Gly Pro Thr Pro Glu
          130          135          140
Pro Pro Leu Ala Ser Pro Gln Thr Ser Gln Met Leu Val Thr Ser Lys
          145          150          155          160
Met Ala Ala Pro Glu Ala Pro Ala Thr Ser Ala Gln Ser Gln Thr Gly
          165          170          175
Ser Pro Ala Gln Glu Ala Ala Thr Glu Gly Pro Ser Ser Ala Cys Ala
          180          185          190
Phe Ser Gln Ala Pro Cys Ala Arg Glu Val Asp Ala Asn Arg Pro Ser
          195          200          205
Thr Ala Phe Leu Gly Gln Asn Asp Val Phe Asp Phe Thr Gln Pro Ala
          210          215          220
Val Ser Val Ala Trp Leu Pro Ala Pro Lys Arg Pro Ala Gln Pro Arg
          225          230          235          240

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<210> 4289

<211> 353

<212> DNA

<213> Homo sapiens

<400> 4289

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120
caaagagcct tttgggaaca gttttcttat tgaaacatac tcagtgttta aacctgcagg
180
tgtgggttgg tggcagtcca catggcatcc ttgtctctgt ccctgttctc ctgtctctgg
240
ctattcaggt tccctgagg atactgtcac ccttgaataa tggagcttgc ggaagaccaa
300
gccctgttt ttggagtcct tgtgctgagg ccgctgtaac ttgaggagag ttg
353

```

<210> 4290

<211> 113

<212> PRT

<213> Homo sapiens

<400> 4290

```

Met Thr Thr Leu Pro Val Arg Asp Met Arg Glu Lys Tyr Gly Ser Leu
 1           5           10           15
Leu Thr Ser Gly Val Thr Ala Gln His Ile Ser Arg Leu Cys Phe His
      20           25           30
Ile Gly Leu Ala Lys Ser Leu Leu Gly Thr Val Phe Leu Leu Lys His
      35           40           45
Thr Gln Cys Leu Asn Leu Gln Val Trp Val Gly Gly Ser Pro His Gly
      50           55           60
Ile Leu Cys Ser Val Pro Val Leu Leu Ser Leu Ala Ile Gln Val Pro
65           70           75           80
Val Arg Ile Leu Ser Pro Leu Asn Asn Gly Ala Cys Gly Arg Pro Ser
      85           90           95
Pro Cys Phe Trp Ser Pro Cys Ala Glu Ala Ala Val Thr Cys Gly Glu
      100          105          110
Leu

```

<210> 4291

<211> 517

<212> DNA

<213> Homo sapiens

<400> 4291

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nnaaatttgc caagccaaga gttaccccag gaagattctc tcttacatgg ccaattttca
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caagcagtca ctcccctagc ccatcatcac acagattatt caaagcccac cgatatctca
120
tgagagaca cactttctca gaagtttgga tcctcagatc acttgagaaa actatttaag
180
atgatgaag caagtgccca gtccttgct tataaggaaa aaggccattc tcagagttca
240
caattttcct ctgatcaaga aatagctcat ctgctgctg aaaatgtgag tgcgctccca
300
gctacggtgg cagttgcttc tccacatacc acctgggcta ctccaaagcc cgccaccctt
360
ctaccacca atgcttcagt gacaccttct gggacttccc agccacagct ggccaccaca
420
gctccacctg taaccactgt cacttctcag cctcccacga ccctcatttc tacagttttt
480
acacgggctg tggctacact ccaagcaatg gctacaa
517

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<210> 4292

<211> 172

<212> PRT

<213> Homo sapiens

<400> 4292

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Xaa Asn Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His
 1           5           10           15
Gly Gln Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp

```

<400> 4294
Ala Gly Ala Pro Gly Ala Asp Ala Cys Ser Val Pro Val Ser Glu Ile

```

      1           5           10           15
Ile Ala Val Glu Glu Thr Asp Val His Gly Lys His Gln Gly Ser Gly
      20           25           30
Lys Trp Gln Lys Met Glu Lys Pro Tyr Ala Phe Thr Val His Cys Val
      35           40           45
Lys Arg Ala Arg Arg His Arg Trp Lys Trp Ala Gln Val Thr Phe Trp
      50           55           60
Cys Pro Glu Glu Gln Leu Cys His Leu Trp Leu Gln Thr Leu Arg Glu
      65           70           75           80
Met Leu Glu Lys Leu Thr Ser Arg Pro Lys His Leu Leu Val Phe Ile
      85           90           95
Asn Pro Phe Gly Gly Lys Gly Gln Gly Lys Arg Ile Tyr Glu Arg Lys
      100          105          110
Val Ala Pro Leu Phe Thr Leu Ala Ser Ile Thr Thr Asp Ile Ile Val
      115          120          125
Thr Glu His Ala Asn Gln Ala Lys Glu Thr Leu Tyr Glu Ile Asn Ile
      130          135          140
Asp Lys Tyr Asp Gly Ile Val Cys Val Gly Gly Asp Gly Met Phe Ser
      145          150          155          160
Glu Val Leu His Gly Leu Ile Gly Arg Thr Gln Arg Ser Ala Gly Val
      165          170          175
Asp Gln Asn His Pro Arg
      180

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<210> 4295
 <211> 431
 <212> DNA
 <213> Homo sapiens

<400> 4295
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 120
 catgtacatt ttgtgtatgg ctgcttttgt gccacaacag cagggttgag tattgcgaca
 180
 gagaccccca ttgccacaa gcctaaaaca ttgcatcg agccctttaa gaaagagttt
 240
 gctggcctg cgcggtggcc gtggctccg cctgtaatcc cagcactttg gaaggctgag
 300
 gcaggcggtg aggtctggag ttcgaaacca gcctggccag cgtggcgaaa cctgtctcc
 360
 ccctcccaga ttcacgtgat tatccacct cagcctcctg agtacctggg actataggcg
 420
 cgtgccaacc a
 431

<210> 4296
 <211> 138
 <212> PRT
 <213> Homo sapiens

<400> 4296
 Xaa Leu Glu Asn His Cys Leu Leu Leu Pro Cys His Leu Tyr Thr Arg

```

      1             5             10             15
Val Thr Asn Lys Ser Pro Leu Leu Ala Pro Cys Phe Val Asn Lys Ile
      20             25             30
Cys Trp Thr Thr Ala Met Pro Val His Val His Phe Val Tyr Gly Cys
      35             40             45
Phe Cys Ala Thr Thr Ala Gly Leu Ser Ile Ala Thr Glu Thr Pro Ile
      50             55             60
Ala His Lys Pro Lys Thr Phe Ala Ile Glu Pro Phe Lys Lys Glu Phe
      65             70             75             80
Ala Gly Arg Ala Arg Trp Pro Trp Leu Pro Pro Val Ile Pro Ala Leu
      85             90             95
Trp Lys Ala Glu Ala Gly Gly Glu Val Trp Ser Ser Lys Pro Ala Trp
      100            105            110
Pro Ala Trp Arg Asn Pro Val Ser Pro Ser Gln Ile His Val Ile Ile
      115            120            125
Pro Pro Gln Pro Pro Glu Tyr Leu Gly Leu
      130            135

```

<210> 4297

<211> 1668

<212> DNA

<213> Homo sapiens

<400> 4297

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gatttcaccg tgattccatc taaactgatt cagtttgacc caggaatgtc aactaagatg
120
tggaatatag caattaccta tgacggatta gaggaagatg atgaggtctt tgaagtaatt
180
ctgaactccc ctgtgaatgc agttcttggc acaaagacaa aagctgcagt gaaaattttg
240
gactcaaaag gaggacaatg ccatccttca tattcctcca accaaagcaa gcacagcaca
300
tgggagaagg gcatttggca tctgctgccc ccagggtctt cctcatccac cacttctggt
360
tcctttcatc tggaagaag acctcttcca tcttccatgc agctagcagt catcagggga
420
gacaccctgc ggggctttga ttctacagat ctttctcaaa ggaagcttag gaccctggg
480
aatggcaaaa cagttcgctc atcctctgtt tatagaaatg gaacagacat catctataat
540
tatcatggga tagtttcctt gaaactggag gatgacagt tcccaactca caaaaggaag
600
gccaaagtat ccatcattag tcagccacaa aagacaatca aagtggcaga actgcctcaa
660
gcagataagg tggaatccac aactgactca cacttcccca gacaggacca gttgccctca
720
tttccaaaga actgcactct ggaattaaag ggactcttcc attttgaaga aggcattccag
780
aagctgtatc agtgcaatgg gatcgcttgg aaagcctgga gtccccaac caaggatgtg
840
gaagacaaat cctgtccagc cgggtggcac cagcactcag gctactgtca catcttgatc
900

```

acagagcaga aaggcacctg gaatgcggct gcccaagctt gcaggggaaca atacctgggc
 960
 aaccttgtaa ctgtattctc caggcagcac atgcggtggc tctgggacat tgggtgggaga
 1020
 aagtcctttt ggataggttt gaacgaccaa gtgcatgctg gccactggga gtggatcggg
 1080
 ggtgaacctg ttgccttcac caatgggaga agagggccct ctccacgctc caagcttgga
 1140
 aagagctgtg ttttggttca aagacaaggg aaatggcaaa caaaagactg taggagagcc
 1200
 aaacctcata attatgtgtg ttccagaaaa ctctaaatat aacagaccct acaggggggc
 1260
 acctggagtt tgtcacctat ttattcacag gatctgtgaa tattgctcca tagaaaacaa
 1320
 attgttatga ttgagtgggt atacctttgt gattctgtct agtgaaaatg ggacattttt
 1380
 aatagtgcc aagagattga taaataaata ttttttacia gataagatac aatttttgta
 1440
 tctcaatacc ttttaaaata aatgccagca gtattaaaaa gtgtaagggt tgtttattcc
 1500
 agaagaccct cacccttacc ccattccaaa tctcaggag caccagtctc atagtccttg
 1560
 gattttttt aaaaaaatt tttggtcccg ttacctctaa tgaatttatt ctgaaatatg
 1620
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 1668

<210> 4298

<211> 411

<212> PRT

<213> Homo sapiens

<400> 4298

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Met | Asp | Ser | Ala | Phe | Val | Gly | Ile | Lys | Val | Asn | Gln | Val | Ser | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Val | Gly | Lys | Asp | Phe | Thr | Val | Ile | Pro | Ser | Lys | Leu | Ile | Gln | Phe |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Pro | Gly | Met | Ser | Thr | Lys | Met | Trp | Asn | Ile | Ala | Ile | Thr | Tyr | Asp |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Gly | Leu | Glu | Glu | Asp | Asp | Glu | Val | Phe | Glu | Val | Ile | Leu | Asn | Ser | Pro |
| | 50 | | | | 55 | | | | | | 60 | | | | |
| Val | Asn | Ala | Val | Leu | Gly | Thr | Lys | Thr | Lys | Ala | Ala | Val | Lys | Ile | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Ser | Lys | Gly | Gly | Gln | Cys | His | Pro | Ser | Tyr | Ser | Ser | Asn | Gln | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Lys | His | Ser | Thr | Trp | Glu | Lys | Gly | Ile | Trp | His | Leu | Leu | Pro | Pro | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ser | Ser | Ser | Ser | Thr | Thr | Ser | Gly | Ser | Phe | His | Leu | Glu | Arg | Arg | Pro |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Leu | Pro | Ser | Ser | Met | Gln | Leu | Ala | Val | Ile | Arg | Gly | Asp | Thr | Leu | Arg |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Gly | Phe | Asp | Ser | Thr | Asp | Leu | Ser | Gln | Arg | Lys | Leu | Arg | Thr | Arg | Gly |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Asn | Gly | Lys | Thr | Val | Arg | Pro | Ser | Ser | Val | Tyr | Arg | Asn | Gly | Thr | Asp |


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<210> 4299
<211> 988
<212> DNA
<213> Homo sapiens
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3495

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 600
 cccacttggtg ctctctcttc tctccatggc ggccctgtggg gctcagcacc tcttcaagct
 660
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 720
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 780
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 840
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 900
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 988

<210> 4300

<211> 84

<212> PRT

<213> Homo sapiens

<400> 4300

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Cys | Leu | Trp | Ser | Ser | Ala | Ala | Arg | Ala | Gln | Gln | Thr | Ile | Tyr | His |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Ser | Val | Pro | Ser | Gly | Gly | His | Pro | Ser | Ser | Ser | His | Trp | Leu | Pro | Ala |
| | | | 20 | | | | 25 | | | | | | 30 | | |
| Val | Ser | Leu | Gln | Ser | Pro | Asp | Arg | Arg | Leu | Ser | His | Asp | Pro | Ala | Ala |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Ser | Ser | Trp | Ser | Gly | Phe | Cys | Gly | Ile | Ser | Pro | Ala | Phe | Ser | Ala | Phe |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ser | Glu | Cys | Ser | Pro | Ser | Ser | Leu | Arg | Ser | His | Pro | Pro | Ala | Leu | Gly |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Ala | Ser | Asp | Arg | | | | | | | | | | | | |

<210> 4301

<211> 2429

<212> DNA

<213> Homo sapiens

<400> 4301

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 120
 cagggccaga gcggggcagg aggatgcttt cccagcccca ccatggagct gcgctgtggg
 180
 ggattgctgt tcagttctcg ctttgattca gggaatctag cccacgtgga gaaggtggaa
 240
 tctttgtcca gtgatgggga aggggtagga ggtggggcgt cagccctgac cagtggcatt
 300

gcctcttccc ctgactatga attcaacgtg tggacccgac cagactgtgc tgaaacggaa
360
tttgagaatg ggaacaggtc atggttctac ttcagcgtcc ggggaggaat gccaggaaaa
420
ctcatcaaga tcaacattat gaacatgaac aagcagagca agctgtattc ccagggcatg
480
gccccctttg tgcgcacact gcccacccgg ccacgctggg aacgcattcg agaccggccc
540
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600
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660
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720
gataccatct attaccatcg ggagctcctt tgctattctc tggatggact tcgtgtagat
780
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840
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900
ttaagcagta gagtacaccc aggggagact ccatctagct ttgtcttcaa tggctttctg
960
gacttcatcc tccgacctga tgatccccgg gcccaaacc tccgtcgctt cttcgtcttt
1020
aagctgattc ccatgttgaa ccccgatggg gtgggtccggg gacactaccg cacagactca
1080
cgtggagtga atctgaaccg tcagtacctg aagcctgatg ccgtcctgca cccggccatc
1140
tatggggcca aagctgtgct tctctaccac catgtgcact ctcgcttgaa ctcccagagt
1200
tcctctgagc accagcccag ttctgtctc cctcctgatg ctctgtttc tgacctggag
1260
aaagccaaca atctccaaaa tgaagctcag tgtgggcact cagctgacag gcataacgct
1320
gaagcctgga aacaaacaga gccagcagaa cagaagctca acagtgtgtg gattatgcca
1380
caacagtctg cggggcttga agagtcagcc cctgatacca tccccccaa agagagtggc
1440
gttgcttact atgtggacct gcattggacat gttccaaaa ggggctgctt catgtacgga
1500
aacagcttta gtgatgagag caccaggtg gaaaacatgc tatatccaaa gctcatctcc
1560
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1620
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1680
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1740
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1800
ccctccagat acactgtgga actatttgag cagggtgggac gagctatggc cattgcagcc
1860
ctggacatgg cggaatgtaa tccgtggccc cgaattgtac tgtcagagca cagcagcctt
1920

actaatctac gggcctggat gctgaaacat gtacgcaaca gccgaggcct aagcagcact
 1980
 ctgaatgtgg gtgtcaacaa gaagaggggc cttcgaactc cacccaaaag tcacaatggg
 2040
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<213> Homo sapiens

<400> 4302

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| Gly | Gly | Met | Pro | Gly | Lys | Leu | Ile | Lys | Ile | Asn | Ile | Met | Asn | Met | Asn |
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3500

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| Ser Arg His Lys Ser His Tyr Arg Asn Arg Glu His Phe Ala Thr Ile | | | | | |
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| Arg Thr Ala Ser Leu Val Thr Arg Gln Met Gln Glu His Glu Gln Asp | | | | | |
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| Ser Glu Leu Arg Glu Gln Met Ser Gly Tyr Lys Arg Met Arg Arg Gln | | | | | |
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| Asn Phe Ala Ala Glu Met Glu Lys Leu Ile Lys Lys His Gln Ala Ala | | | | | |
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<213> Homo sapiens

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<213> Homo sapiens

<400> 4306

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| Asp | Ala | Ala | Leu | Arg | Ala | Arg | Lys | Leu | Arg | Ser | Asn | Leu | Arg | Gln | Leu |
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| Thr | Leu | Thr | Ala | Ala | Gly | Ala | Cys | Pro | Gly | Ala | Gly | Ala | Asp | Ala | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Glu | Ser | Pro | Ala | Ser | Pro | Gln | Leu | Val | Leu | Pro | Ala | Asn | Leu | Gly | Asp |
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| Ile | Glu | Ala | Leu | Asn | Leu | Gly | Asn | Asn | Gly | Leu | Glu | Glu | Val | Pro | Glu |

| | | | | | | | | | | | | | | |
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| Gly | Leu | Gly | Ser | Ala | Leu | Gly | Ser | Leu | Arg | Val | Leu | Val | Leu | Arg |
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| Asn | Arg | Phe | Ala | Arg | Leu | Pro | Pro | Ala | Val | Ala | Glu | Leu | Gly | His |
| | | | 100 | | | | | 105 | | | | | 110 | His |
| Leu | Thr | Glu | Leu | Asp | Val | Ser | His | Asn | Arg | Leu | Thr | Ala | Leu | Gly |
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| Glu | Val | Val | Ser | Ala | Leu | Arg | Glu | Leu | Arg | Lys | Leu | Asn | Leu | Ser |
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| Asn | Gln | Leu | Pro | Ala | Leu | Pro | Ala | Gln | Leu | Gly | Ala | Leu | Ala | His |
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| Glu | Glu | Leu | Asp | Val | Ser | Phe | Asn | Arg | Leu | Ala | His | Leu | Pro | Asp |
| | | | 165 | | | | | 170 | | | | | 175 | Ser |
| Leu | Ser | Cys | Leu | Ser | Arg | Leu | Arg | Thr | Leu | Asp | Val | Asp | His | Asn |
| | | 180 | | | | | | 185 | | | | | 190 | Gln |
| Leu | Thr | Ala | Phe | Pro | Arg | Gln | Leu | Leu | Gln | Leu | Val | Ala | Leu | Glu |
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| Leu | Asp | Val | Ser | Ser | Asn | Arg | Leu | Arg | Gly | Leu | Pro | Glu | Asp | Ile |
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| Thr | Leu | Pro | Ala | Gly | Phe | Cys | Glu | Leu | Ala | Ser | Leu | Glu | Ser | Leu |
| | | | 245 | | | | | 250 | | | | | | Met |
| Leu | Asp | Asn | Asn | Gly | Leu | Gln | Ala | Leu | Pro | Ala | Gln | Phe | Ser | Cys |
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| Gln | Arg | Leu | Lys | Met | Leu | Asn | Leu | Ser | Ser | Asn | Leu | Phe | Glu | Glu |
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| Leu | Leu | Thr | Leu | Trp | Leu | Asp | Asn | Asn | Arg | Ile | Arg | Tyr | Leu | Pro |
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| Cys | Met | Lys | Gly | Ile | Pro | Tyr | Ile | Ala | Ala | Tyr | Gln | Lys | Glu | Leu |
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| | | | 405 | | | | | 410 | | | | | 415 | Gly |
| His | Lys | Ala | Ala | Gly | Lys | Thr | Leu | Leu | Arg | His | Cys | Leu | Thr | Glu |
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| Asp | Glu | Ser | Tyr | Glu | Val | Ile | Gln | Pro | Phe | Phe | Leu | Ser | Pro | Gly |
| | | | 485 | | | | | 490 | | | | | 495 | Ala |
| Leu | Tyr | Val | Leu | Val | Val | Asn | Leu | Ala | Thr | Tyr | Glu | Pro | Arg | His |
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3505

| | | |
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| 945 | 950 | 955 |
| Pro Leu Val Glu Glu Leu Asn Val Leu Leu Gln Glu Trp Pro Gly Leu | | 960 |
| | 965 | 970 |
| His Tyr Thr Val His Ile Leu Cys Ser Lys Cys Leu Lys Arg Gly Ser | | 975 |
| | 980 | 985 |
| Pro Asn Pro His Ala Phe Pro Gly Glu Leu Leu Ser Gln Pro Arg Pro | | 990 |
| | 995 | 1000 |
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| | 1010 | 1015 |
| Asn Val Ala Leu Val Tyr Pro Pro Thr Pro Thr Val Ile Ser Pro Cys | | 1020 |
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 Ser Cys Ser Cys Cys His Ala Ser Leu Cys Pro Ala Gly Gly Cys Gly
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 Trp Gly Cys Ser Phe Leu Thr Gly Xaa Cys Gly Gly Ser Gly Ala Xaa
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1928

<210> 4310

<211> 599

<212> PRT

<213> Homo sapiens

<400> 4310

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 20              25              30
Phe Cys Thr Asp Ser Ser Ser Leu Arg Leu Ser Thr Leu Gln Leu Val
 35              40              45
Lys Asn His Met Ala Val His Tyr Asn Lys Ile Leu Ser Ala Lys Ala
 50              55              60
Ala Val Asp Cys Ser Val Pro Val Ser Val Ser Thr Ser Ile Lys Tyr
 65              70              75              80
Ala Asp Gln Gln Arg Arg Glu Lys Leu Lys Lys Glu Leu Ala Gln Cys
 85              90              95
Glu Lys Glu Phe Lys Leu Thr Lys Thr Ala Met Arg Ala Asn Tyr Lys
100              105              110
Asn Asn Ser Lys Ser Leu Phe Asn Thr Leu Gln Lys Pro Ser Gly Glu
115              120              125
Pro Gln Ile Glu Asp Asp Met Leu Lys Glu Glu Met Asn Gly Phe Ser
130              135              140
Ser Phe Ala Arg Ser Leu Val Pro Ser Ser Glu Arg Leu His Leu Ser
145              150              155              160
Leu His Lys Ser Ser Lys Val Ile Thr Asn Gly Pro Glu Lys Asn Ser
165              170              175
Ser Ser Ser Pro Ser Ser Val Asp Tyr Ala Ala Ser Gly Pro Arg Lys
180              185              190
Leu Ser Ser Gly Ala Leu Tyr Gly Arg Arg Pro Arg Ser Thr Phe Pro
195              200              205
Asn Ser His Arg Phe Gln Leu Val Ile Ser Lys Ala Pro Ser Gly Asp
210              215              220
Leu Leu Asp Lys His Ser Glu Leu Phe Ser Asn Lys Gln Leu Pro Phe
225              230              235              240
Thr Pro Arg Thr Leu Lys Thr Glu Ala Lys Ser Phe Leu Ser Gln Tyr
245              250              255
Arg Tyr Tyr Thr Pro Ala Lys Arg Lys Lys Asp Phe Thr Asp Gln Arg
260              265              270
Ile Glu Ala Glu Thr Gln Thr Glu Leu Ser Phe Lys Ser Glu Leu Gly
275              280              285
Thr Ala Glu Thr Lys Asn Met Thr Asp Ser Glu Met Asn Ile Lys Gln
290              295              300
Ala Ser Asn Cys Val Thr Tyr Asp Ala Lys Glu Lys Ile Ala Pro Leu
305              310              315              320
Pro Leu Glu Gly His Asp Ser Thr Trp Asp Glu Ile Lys Asp Asp Ala
325              330              335
Leu Gln His Ser Ser Pro Arg Ala Met Cys Gln Tyr Ser Leu Lys Pro
340              345              350
Pro Ser Thr Arg Lys Ile Tyr Ser Asp Glu Glu Glu Leu Leu Tyr Leu
355              360              365
Ser Phe Ile Glu Asp Val Thr Asp Glu Ile Leu Lys Leu Gly Leu Phe
370              375              380
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<211> 432
<212> DNA
<213> Homo sapiens
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<210> 4312
<211> 144
<212> PRT
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<213> Homo sapiens

<400> 4312

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His Tyr Asp Val Gln Ser Ile Leu Phe Asn Ile Asn Glu Ala Met Ala
      20           25           30
Thr Arg Ala Asn Val Gly Lys Arg Lys Asn Ile Thr Thr Gly Ala Ser
      35           40           45
Ala Ala Ser Gln Thr Gln Met Pro Thr Gly Gln Thr Gly Asn Cys Glu
      50           55           60
Ser Pro Leu Gly Ser Lys Glu Asp Leu Asn Ser Lys Glu Asn Leu Asp
      65           70           75           80
Ala Asp Glu Gly Asp Gly Lys Ser Asn Asp Leu Val Leu Ser Cys Pro
      85           90           95
Tyr Phe Arg Asn Glu Thr Gly Gly Glu Gly Asp Arg Arg Ile Ala Leu
      100          105          110
Ser Arg Ala Asn Ser Ser Ser Phe Ser Ser Gly Glu Ser Cys Ser Phe
      115          120          125
Glu Ser Ser Leu Ser Ser His Cys Thr Asn Ala Gly Val Ser Val Leu
      130          135          140

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<210> 4313

<211> 936

<212> DNA

<213> Homo sapiens

<400> 4313

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120
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180
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240
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300
gccaagtct cctgctcagg gcttctctcc aatgccagcc ctgccactcc ttctcacc
360
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420
ccttcaccag ctttctggga caccatgccc tgaggaaggg acctttgggt ttctctaaac
480
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540
ctcaaaccat tccaagaag agggacctca gctggcaatc tggaacctg gccaggtct
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atggccctgt ggtccctaga gcaccttca tgctgtaggg tctgcagcc ccattcttcc
720
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780

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gtttacttct ctgcacgggg gactcacccc aagaccattt ccagcagctt cccaggtgat
 840
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 936

<210> 4314
 <211> 110
 <212> PRT
 <213> Homo sapiens

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 Thr Arg Met Ala Leu Trp Ser Leu Glu His Pro Ser Cys Cys Arg Val
 20 25 30
 Leu Gln Pro His Pro Phe Ser Thr Gly Pro Trp Tyr Pro Gly Ser Ser
 35 40 45
 Leu Ser Ser Ala Thr Asp Leu Cys Ala Leu Val Tyr Phe Ser Ala Arg
 50 55 60
 Gly Thr His Pro Lys Thr Ile Ser Ser Ser Phe Pro Gly Asp Val Val
 65 70 75 80
 Pro Gln Gly Trp Ala Leu Gln Leu Trp Pro Ser Ser Leu Val Leu Pro
 85 90 95
 Arg Arg His Gln Ala Ala Gln Asn Glu Val Thr Ala Gly Asn
 100 105 110

<210> 4315
 <211> 573
 <212> DNA
 <213> Homo sapiens

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 180
 ccgtcaccta ccatccaagc catggccacc tacctgccaa gccatggcca cctaccggcc
 240
 aagccatggt cacctaccca ccaagtcatg gtcgcctacc atccaaggag caggcctgga
 300
 acagatcctt cccagagcc ctcagtagga gccaacctg ctgacacctt gatctcagac
 360
 ttcaagcctc cagaactgtg ggacaatcct tcaactgtcat ttaatccacc cagcatgtgg
 420
 tctcttgta cagttgcatt agccagtga cctaccggg cccttctgca gtcgcctggc
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 tcaggagtgg ttctggctcag gaagttctga ggccaggcag gatcgggaca ctccctggaa
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 573

<210> 4316
 <211> 169
 <212> PRT
 <213> Homo sapiens

<400> 4316
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 His Arg Gln Ala Gln Ser Asp Asp His Val Lys Thr Gln Gly Arg Asp
 20 25 30
 Gly His Leu Pro Pro Arg His Gly His Leu Pro Ser Lys Pro Trp Ser
 35 40 45
 Pro Ser Pro Ser His Ser His Leu Pro Ser Lys Pro Pro Ser Pro Thr
 50 55 60
 Ile Gln Ala Met Ala Thr Tyr Leu Pro Ser His Gly His Leu Pro Ala
 65 70 75 80
 Lys Pro Trp Ser Pro Thr His Gln Val Met Val Ala Tyr His Pro Arg
 85 90 95
 Ser Arg Pro Gly Thr Asp Pro Ser Pro Glu Pro Ser Val Gly Ala Asn
 100 105 110
 Pro Ala Asp Thr Leu Ile Ser Asp Phe Lys Pro Pro Glu Leu Trp Asp
 115 120 125
 Asn Pro Ser Leu Ser Phe Asn Pro Pro Ser Met Trp Ser Leu Val Thr
 130 135 140
 Val Ala Leu Ala Ser Glu Pro Thr Arg Ala Leu Leu Gln Ser Pro Gly
 145 150 155 160
 Ser Gly Val Val Leu Val Arg Lys Phe
 165

<210> 4317
 <211> 744
 <212> DNA
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 120
 gatgttatca tttgggtgga aggaaaagaa tttccttgcc atagagctgt gctctcagcc
 180
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 240
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 420
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 480
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 540

cttgacaaaag atgaacttat tgattatatt tgtagtgatg aacttggttat tggtaaagag
 600
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<210> 4318
 <211> 239
 <212> PRT
 <213> Homo sapiens

<400> 4318
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 Val Ile Ile Trp Val Glu Gly Lys Glu Phe Pro Cys His Arg Ala Val
 35 40 45
 Leu Ser Ala Cys Ser Ser Tyr Phe Arg Ala Met Phe Cys Asn Asp His
 50 55 60
 Arg Glu Ser Arg Glu Met Leu Val Glu Ile Asn Gly Ile Leu Ala Glu
 65 70 75 80
 Ala Met Glu Cys Phe Leu Gln Tyr Val Tyr Thr Gly Lys Val Lys Ile
 85 90 95
 Thr Thr Glu Asn Val Gln Tyr Leu Phe Glu Thr Ser Ser Leu Phe Gln
 100 105 110
 Ile Ser Val Leu Arg Asp Ala Cys Ala Lys Phe Leu Glu Glu Gln Leu
 115 120 125
 Asp Pro Cys Asn Cys Leu Gly Ile Gln Arg Phe Ala Asp Thr His Ser
 130 135 140
 Leu Lys Thr Leu Phe Thr Lys Cys Lys Asn Phe Ala Leu Gln Thr Phe
 145 150 155 160
 Glu Asp Val Ser Gln His Glu Glu Phe Leu Glu Leu Asp Lys Asp Glu
 165 170 175
 Leu Ile Asp Tyr Ile Cys Ser Asp Glu Leu Val Ile Gly Lys Glu Glu
 180 185 190
 Met Val Phe Glu Ala Val Met Arg Trp Val Tyr Arg Ala Val Asp Leu
 195 200 205
 Arg Arg Pro Leu Leu His Glu Leu Leu Thr His Val Arg Leu Pro Leu
 210 215 220
 Leu His Pro Asn Tyr Phe Val Gln Thr Val Glu Val Asp Gln Leu
 225 230 235

<210> 4319
 <211> 388
 <212> DNA
 <213> Homo sapiens

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 120
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 180
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 240
 aaaatgtgca attacgacaa aatcttggcc acaaagaaaa acctagacca tgtcaataaa
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 360
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<210> 4320

<211> 129

<212> PRT

<213> Homo sapiens

<400> 4320

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Met | Glu | Lys | Ser | Ile | Asp | Ala | Val | Ile | Ala | Thr | Ala | Ser | Ala | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Ser | Ser | Ser | Pro | Gly | Arg | Ser | His | Ser | Lys | Asp | Arg | Thr | Leu | Gly |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Lys | Pro | Asp | Ser | Leu | Leu | Val | Pro | Ala | Val | Ala | Ser | Asp | Ser | Cys | Asn |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Asn | Ser | Ile | Ser | Leu | Leu | Ser | Glu | Lys | Leu | Thr | Ser | Ser | Cys | Ser | Pro |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| His | His | Ile | Lys | Arg | Ser | Val | Val | Glu | Ala | Met | Gln | Arg | Gln | Ala | Arg |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Lys | Met | Cys | Asn | Tyr | Asp | Lys | Ile | Leu | Ala | Thr | Lys | Lys | Asn | Leu | Asp |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| His | Val | Asn | Lys | Ile | Leu | Lys | Ala | Lys | Lys | Leu | Gln | Arg | Gln | Ala | Arg |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Thr | Gly | Asn | Asn | Phe | Val | Lys | Arg | Arg | Pro | Gly | Arg | Pro | Arg | Ser | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |

Arg

<210> 4321

<211> 278

<212> DNA

<213> Homo sapiens

<400> 4321

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 120
 cgtcccgggtg gaaggcagcc ctgggcggaa cccaggcggt taacggctca ctaggcagcc
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 278

<210> 4322
 <211> 85
 <212> PRT
 <213> Homo sapiens

<400> 4322
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 His Val Leu Ile Cys Ser Pro Asp Leu Gly Leu Pro Ser Glu Pro Leu
 20 25 30
 Asn Ala Trp Val Pro Pro Arg Ala Ala Phe His Arg Asp Ala Gly Pro
 35 40 45
 Ala Val Ala Gly Pro Cys Arg Cys Gly Gly Leu Leu Thr Lys Glu Pro
 50 55 60
 Gly Leu Ala Ala Trp Asn Asn Leu Gln Val Gly Val Leu Arg Gly Leu
 65 70 75 80
 Trp Gln Val Leu Gly
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<210> 4323
 <211> 1542
 <212> DNA
 <213> Homo sapiens

<400> 4323
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 120
 gacgagaaga ttgagggtgga tgacccccct gacaaggagg acatgcgatc aagcttcagg
 180
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 240
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 300
 gttaagagag aaacagaagc cagttctata aacctgagtg tttatgaacc ttttaaagtc
 360
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 420
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 480
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 720
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 780
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 840

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 960
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 1020
 aaacaggtca caatcaagcc tgtgggtact gctttcctcc cagtgtctgc tgtgaagacg
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 1260
 actgtgcacc ttgccaacct taaccttttg cctcaggggtg cccaggccac ctctgaactc
 1320
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 1380
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<210> 4324

<211> 514

<212> PRT

<213> Homo sapiens

<400> 4324

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Tyr | Ser | Lys | Asp | Gly | Ala | Lys | Ser | Leu | Lys | Gly | Asp | Val | Pro | Ala |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Ser | Glu | Val | Thr | Leu | Lys | Asp | Ser | Thr | Phe | Ser | Gln | Phe | Ser | Pro | Ile |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ser | Ser | Ala | Glu | Glu | Phe | Asp | Asp | Asp | Glu | Lys | Ile | Glu | Val | Asp | Asp |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Pro | Pro | Asp | Lys | Glu | Asp | Met | Arg | Ser | Ser | Phe | Arg | Ser | Asn | Val | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Gly | Ser | Ala | Pro | Gln | Gln | Asp | Tyr | Asp | Lys | Leu | Lys | Ala | Leu | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Gly | Glu | Asn | Ser | Ser | Lys | Thr | Gly | Leu | Ser | Thr | Ser | Gly | Asn | Val | Glu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Lys | Asn | Lys | Ala | Val | Lys | Arg | Glu | Thr | Glu | Ala | Ser | Ser | Ile | Asn | Leu |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Ser | Val | Tyr | Glu | Pro | Phe | Lys | Val | Arg | Lys | Ala | Glu | Asp | Lys | Leu | Lys |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Glu | Ser | Ser | Asp | Lys | Val | Leu | Glu | Asn | Arg | Val | Leu | Asp | Gly | Lys | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Ser | Ser | Glu | Lys | Asn | Asp | Thr | Ser | Leu | Pro | Ser | Val | Ala | Pro | Ser | Lys |
| 145 | | | | 150 | | | | | | 155 | | | | | 160 |
| Thr | Lys | Ser | Ser | Ser | Lys | Leu | Ser | Ser | Cys | Ile | Ala | Ala | Ile | Ala | Ala |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Leu | Ser | Ala | Lys | Lys | Ala | Ala | Ser | Asp | Ser | Cys | Lys | Glu | Pro | Val | Ala |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Arg | Glu | Ser | Ser | Pro | Leu | Pro | Lys | Glu | Val | Asn | Asp | Ser | Pro |
| | | | 180 | | | | | 185 | | | | | | 190 | |
| | | | 195 | | | | 200 | | | | | | 205 | | |
| Arg | Ala | Ala | Asp | Lys | Ser | Pro | Glu | Ser | Gln | Asn | Leu | Ile | Asp | Gly | Thr |
| | | | 210 | | | | 215 | | | | | | 220 | | |
| Lys | Lys | Pro | Ser | Leu | Lys | Gln | Pro | Asp | Ser | Pro | Arg | Ser | Ile | Ser | Ser |
| | | | | | | 230 | | | | | 235 | | | | 240 |
| Glu | Asn | Ser | Ser | Lys | Gly | Ser | Pro | Ser | Ser | Pro | Ala | Gly | Ser | Thr | Pro |
| | | | | | | 245 | | | | 250 | | | | | 255 |
| Ala | Ile | Pro | Lys | Val | Arg | Ile | Lys | Thr | Ile | Lys | Thr | Ser | Ser | Gly | Glu |
| | | | | | | 260 | | | | 265 | | | | | 270 |
| Ile | Lys | Arg | Thr | Val | Thr | Arg | Val | Leu | Pro | Glu | Val | Asp | Leu | Asp | Ser |
| | | | | | | 275 | | | | 280 | | | | | 285 |
| Gly | Lys | Lys | Pro | Ser | Glu | Gln | Thr | Ala | Ser | Val | Met | Ala | Ser | Val | Thr |
| | | | | | | 290 | | | | | 300 | | | | |
| Ser | Leu | Leu | Ser | Ser | Pro | Ala | Ser | Ala | Ala | Val | Leu | Ser | Ser | Pro | Pro |
| | | | | | | 310 | | | | | 315 | | | | 320 |
| Arg | Ala | Pro | Leu | Gln | Ser | Ala | Val | Val | Thr | Asn | Ala | Val | Ser | Pro | Ala |
| | | | | | | 325 | | | | 330 | | | | | 335 |
| Glu | Leu | Thr | Pro | Lys | Gln | Val | Thr | Ile | Lys | Pro | Val | Ala | Thr | Ala | Phe |
| | | | | | | 340 | | | | 345 | | | | | 350 |
| Leu | Pro | Val | Ser | Ala | Val | Lys | Thr | Ala | Gly | Ser | Gln | Val | Ile | Asn | Leu |
| | | | | | | 355 | | | | | 360 | | | | 365 |
| Lys | Leu | Ala | Asn | Asn | Thr | Thr | Val | Lys | Ala | Thr | Val | Ile | Ser | Ala | Ala |
| | | | | | | 370 | | | | | 380 | | | | |
| Ser | Val | Gln | Ser | Ala | Ser | Ser | Ala | Ile | Ile | Lys | Ala | Ala | Asn | Ala | Ile |
| | | | | | | 385 | | | | | 395 | | | | 400 |
| Gln | Gln | Gln | Thr | Val | Val | Val | Pro | Ala | Ser | Ser | Leu | Ala | Asn | Ala | Lys |
| | | | | | | 405 | | | | 410 | | | | | 415 |
| Leu | Val | Pro | Lys | Thr | Val | His | Leu | Ala | Asn | Leu | Asn | Leu | Leu | Pro | Gln |
| | | | | | | 420 | | | | 425 | | | | | 430 |
| Gly | Ala | Gln | Ala | Thr | Ser | Glu | Leu | Arg | Gln | Val | Leu | Thr | Lys | Pro | Gln |
| | | | | | | 435 | | | | 440 | | | | | 445 |
| Gln | Gln | Ile | Lys | Gln | Ala | Ile | Ile | Asn | Ala | Ala | Ala | Ser | Gln | Pro | Pro |
| | | | | | | 450 | | | | | 460 | | | | |
| Lys | Lys | Val | Ser | Arg | Val | Gln | Val | Val | Ser | Ser | Leu | Gln | Ser | Ser | Val |
| | | | | | | 465 | | | | | 475 | | | | 480 |
| Val | Glu | Ala | Phe | Asn | Lys | Val | Leu | Ser | Ser | Val | Asn | Pro | Val | Pro | Val |
| | | | | | | 485 | | | | 490 | | | | | 495 |
| Tyr | Ile | Pro | Asn | Leu | Ser | Pro | Pro | Ala | Asn | Ala | Gly | Ile | Thr | Leu | Pro |
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<210> 4325

<211> 1405

<212> DNA

<213> Homo sapiens

<400> 4325

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120

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 240
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<210> 4326

<211> 336

<212> PRT

<213> Homo sapiens

<400> 4326

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 20 | | 25 | | 30 | | | | | | | | | | |
| Ala | Lys | Arg | Leu | Arg | Phe | Val | Ala | Gly | Val | Ile | Phe | Val | Asp | Glu | Gly |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Ala | Ala | Cys | Gly | Gln | Ser | Leu | Glu | Glu | Arg | Ser | Lys | Thr | Leu | Ala | Glu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Val | Lys | Pro | Ile | Leu | Gln | Ala | Thr | Gly | Phe | Pro | Trp | His | Val | Val | Ala |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Leu | Glu | Glu | Val | Phe | Ser | Leu | Pro | Pro | Ser | Val | Leu | Trp | Cys | Ser | Ala |
| | | | 85 | | | | | | 90 | | | | 95 | | |
| Gln | Glu | Leu | Val | Gly | Ser | Glu | Gly | Ala | Tyr | Lys | Ala | Ala | Val | Asp | Ser |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Phe | Leu | Gln | Gln | Gln | Tyr | Val | Leu | Gly | Ala | Gly | Gly | Gly | Pro | Gly | Pro |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Thr | Gln | Gly | Glu | Glu | Gln | Pro | Pro | Gln | Pro | Pro | Leu | Asp | Pro | Gln | Asn |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Leu | Ala | Arg | Pro | Pro | Ala | Pro | Ala | Gln | Thr | Glu | Ala | Leu | Ser | Gln | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Phe | Cys | Ser | Val | Arg | Thr | Leu | Thr | Ala | Lys | Glu | Glu | Leu | Leu | Gln | Thr |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Leu | Arg | Thr | His | Leu | Ile | Leu | His | Met | Ala | Arg | Ala | His | Gly | Tyr | Ser |
| | 180 | | | | | | 185 | | | | | 190 | | | |
| Lys | Val | Met | Thr | Gly | Asp | Ser | Cys | Thr | Arg | Leu | Ala | Ile | Lys | Leu | Met |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Thr | Asn | Leu | Ala | Leu | Gly | Arg | Gly | Ala | Phe | Leu | Ala | Trp | Asp | Thr | Gly |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Phe | Ser | Asp | Glu | Arg | His | Gly | Asp | Val | Val | Val | Val | Arg | Pro | Met | Arg |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 |
| Asp | His | Thr | Leu | Lys | Glu | Val | Ala | Phe | Tyr | Asn | Arg | Leu | Phe | Ser | Val |
| | | | 245 | | | | | | 250 | | | | 255 | | |
| Pro | Ser | Val | Phe | Thr | Pro | Ala | Val | Asp | Thr | Lys | Ala | Pro | Glu | Lys | Ala |
| | | 260 | | | | | | 265 | | | | | 270 | | |
| Ser | Ile | His | Arg | Leu | Met | Glu | Ala | Phe | Ile | Leu | Arg | Leu | Gln | Thr | Gln |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Phe | Pro | Ser | Thr | Val | Ser | Thr | Val | Tyr | Arg | Cys | Val | Trp | Val | Cys | Ala |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Gly | Gly | Ala | Arg | Val | Cys | Ala | Val | Cys | Gly | Cys | Val | Arg | Val | Val | Ser |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Ser | Pro | Leu | Val | Leu | Arg | Pro | Gly | Leu | Arg | Val | Glu | Pro | Gln | Pro | Val |
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<210> 4327

<211> 551

<212> DNA

<213> Homo sapiens

<400> 4327

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120

tgtgcaggtg gggaaattta gaccctgaaa aagggtatgcc ctgagatcac catgagattg

180

aggggcaagc agggctcacc ctgactggct cacttcccag gcaccccat gagcccaggc

240

accgcctgcc accctcactc tccaggaaga gccaccgcgt ggtggccggg atcgtgtggt
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 360
 cgctaaggcc acacagccag ggagaggagg tggctcgtga caccacgatg ggacacaccc
 420
 acctctggga gaggaggggtg actccgacag cccttgccctg ccaggatgga gcctggactc
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<210> 4328

<211> 107

<212> PRT

<213> Homo sapiens

<400> 4328

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| Met | Pro | Ser | Arg | Val | Gln | Ala | Pro | Ser | Trp | Gln | Ala | Arg | Ala | Val | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Thr | Leu | Leu | Ser | Gln | Arg | Trp | Val | Cys | Pro | Ile | Val | Val | Ser | Arg |
| | | 20 | | | | | 25 | | | | 30 | | | | |
| Ala | Thr | Ser | Ser | Pro | Trp | Leu | Cys | Gly | Leu | Ser | Val | Ser | His | Pro | Gln |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| His | Leu | Asp | Gly | Leu | Arg | Val | Arg | Ala | Lys | Val | Arg | Arg | Pro | Gly | His |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| His | Thr | Ile | Pro | Ala | Thr | Thr | Arg | Trp | Leu | Phe | Leu | Glu | Ser | Glu | Gly |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Gly | Arg | Arg | Cys | Leu | Gly | Ser | Trp | Gly | Cys | Leu | Gly | Ser | Glu | Pro | Val |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Arg | Val | Ser | Pro | Ala | Cys | Pro | Ser | Ile | Ser | Trp | | | | | |
| | | | 100 | | | | | 105 | | | | | | | |

<210> 4329

<211> 3192

<212> DNA

<213> Homo sapiens

<400> 4329

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 120
 tgtacctaaa actttggctc gaaagcgaat ctggaataaa aagtaccca tttgtatcga
 180
 gcttggtcag caagatgact ttatgtctaa agctcagact gataaggaga cttcagaaga
 240
 gaagccgcca gctggaggaa gggaggaccc ttagaagcca ccccgccctc aggaggaaca
 300
 agatctagcc agcgagatca gatactctat ctctttggga gaactggccg agaaaaagag
 360
 gaatggttta ggagatttat tctggcatct aagctaaagt cggaatcaa gaagtcacg
 420

ggtgtctctg gaggtaaacc agggcttttg cctgcacaca gcagacacaa cagtccgtcc
480
gggcacctga cccacagccg cagcagcagc aaaggcagtg tggaggagat catgtcacag
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1980
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2040

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<210> 4330

<211> 371

<212> PRT

<213> Homo sapiens

<400> 4330

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Met | Leu | Leu | Asp | Tyr | Ser | Val | Tyr | Met | Gly | Arg | Cys | Val | Pro | Gln | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Arg | Ser | Pro | Gln | Arg | Ser | Pro | Leu | Gln | Ser | Ala | Glu | Ser | Ser | Pro |
| | | | 35 | | | | 40 | | | | 45 | | | | |
| Thr | Ala | Gly | Lys | Lys | Leu | Pro | Glu | Val | Pro | Pro | Ser | Glu | Glu | Glu | Glu |

50 55 60
 Gln Glu Ala Trp Val Asn Ala Leu Leu Gly Arg Ile Phe Trp Asp Phe
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 Leu Gly Glu Lys Tyr Trp Ser Asp Leu Val Ser Lys Lys Ile Gln Met
 85 90 95
 Lys Leu Ser Lys Ile Lys Leu Pro Tyr Phe Met Asn Glu Leu Thr Leu
 100 105 110
 Thr Glu Leu Asp Met Gly Val Ala Val Pro Lys Ile Leu Gln Ala Phe
 115 120 125
 Lys Pro Tyr Val Asp His Gln Gly Leu Trp Ile Asp Leu Glu Met Ser
 130 135 140
 Tyr Asn Gly Ser Phe Leu Met Thr Leu Glu Thr Lys Met Asn Leu Pro
 145 150 155 160
 Lys Leu Gly Lys Glu Pro Leu Val Glu Ala Leu Lys Val Gly Glu Ile
 165 170 175
 Gly Lys Glu Gly Cys Arg Pro Arg Ala Phe Cys Leu Ala Asp Ser Asp
 180 185 190
 Glu Glu Ser Ser Ser Ala Gly Ser Ser Glu Glu Asp Asp Ala Pro Glu
 195 200 205
 Pro Ala Gly Glu Thr Asn Ser Ser Ser Gln Gly Glu Gly Tyr Val Gly
 210 215 220
 Gly His Arg Thr Ser Lys Ile Met Arg Phe Val Asp Lys Ile Thr Lys
 225 230 235 240
 Ser Lys Tyr Phe Gln Lys Ala Thr Glu Thr Glu Phe Ile Lys Arg Xaa
 245 250 255
 Ile Glu Glu Val Ser Asn Thr Pro Leu Leu Leu Thr Val Glu Val Gln
 260 265 270
 Glu Cys Arg Gly Thr Leu Ala Val Asn Ile Pro Pro Pro Pro Thr Asp
 275 280 285
 Arg Val Trp Tyr Gly Phe Arg Lys Pro Pro His Val Glu Leu Lys Ala
 290 295 300
 Arg Pro Lys Leu Gly Glu Arg Glu Val Thr Leu Val His Val Thr Asp
 305 310 315 320
 Trp Ile Glu Lys Lys Leu Glu Gln Glu Phe Gln Lys Val Phe Val Met
 325 330 335
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 355 360 365
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<210> 4331

<211> 1355

<212> DNA

<213> Homo sapiens

<400> 4331

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120

gatttaaagt agcctttgca cctcagtttc cttcagaatg ctgcaaaact atatgctaca

180

gtatattgta ttccatttgc agaagaggac ttatcagcag atgccctctt gaatattctt
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 300
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 420
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 720
 aatggaatat cattttacaat ttgggatcga tggaccgtac atggaaaaga agatttcacc
 780
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 840
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 900
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 960
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 1020
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 1080
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 1140
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 1200
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<210> 4332

<211> 345

<212> PRT

<213> Homo sapiens

<400> 4332

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| Glu | Lys | Tyr | Phe | Asn | His | Lys | Ala | Leu | Gln | Leu | Leu | His | Cys | Phe | Pro |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Leu | Asp | Ile | Arg | Leu | Lys | Asp | Gly | Ser | Leu | Phe | Trp | Gln | Ser | Pro | Lys |
| | | | 20 | | | | 25 | | | | | 30 | | | |
| Arg | Pro | Pro | Ser | Pro | Ile | Lys | Phe | Asp | Leu | Asn | Glu | Pro | Leu | His | Leu |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Ser | Phe | Leu | Gln | Asn | Ala | Ala | Lys | Leu | Tyr | Ala | Thr | Val | Tyr | Cys | Ile |

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 Ser Glu Val Lys Ile Gln Glu Phe Lys Pro Ser Asn Lys Val Val Gln
 85 90 95
 Thr Asp Glu Thr Ala Arg Lys Pro Asp His Val Pro Ile Ser Ser Glu
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 Asp Glu Arg Asn Ala Ile Phe Gln Leu Glu Lys Ala Ile Leu Ser Asn
 115 120 125
 Glu Ala Thr Lys Ser Asp Leu Gln Met Ala Val Leu Ser Phe Glu Lys
 130 135 140
 Asp Asp Asp His Asn Gly His Ile Asp Phe Ile Thr Ala Ala Ser Asn
 145 150 155 160
 Leu Arg Ala Lys Met Tyr Ser Ile Glu Pro Ala Asp Arg Phe Lys Thr
 165 170 175
 Lys Arg Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Thr Ala
 180 185 190
 Thr Val Ser Gly Leu Val Ala Leu Glu Met Ile Lys Val Thr Gly Gly
 195 200 205
 Tyr Pro Phe Glu Ala Tyr Lys Asn Cys Phe Leu Asn Leu Ala Ile Pro
 210 215 220
 Ile Val Val Phe Thr Glu Thr Thr Glu Val Arg Lys Thr Lys Ile Arg
 225 230 235 240
 Asn Gly Ile Ser Phe Thr Ile Trp Asp Arg Trp Thr Val His Gly Lys
 245 250 255
 Glu Asp Phe Thr Leu Leu Asp Phe Ile Asn Ala Val Lys Glu Lys Tyr
 260 265 270
 Gly Ile Glu Pro Thr Met Val Val Gln Gly Val Lys Met Leu Tyr Val
 275 280 285
 Pro Val Met Pro Gly His Ala Lys Arg Leu Lys Leu Thr Met His Lys
 290 295 300
 Leu Val Lys Pro Thr Thr Glu Lys Lys Tyr Val Asp Leu Thr Val Ser
 305 310 315 320
 Phe Ala Pro Asp Ile Asp Gly Asp Glu Asp Leu Pro Gly Pro Pro Val
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 Arg Tyr Tyr Phe Ser His Asp Thr Asp
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<210> 4333
 <211> 1278
 <212> DNA
 <213> Homo sapiens

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 300

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<210> 4334

<211> 189

<212> PRT

<213> Homo sapiens

<400> 4334

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Pro | Gln | Arg | Arg | Leu | Leu | Ser | Ala | Arg | Val | Asn | Arg | Ser | Gln | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Ala | Gly | Val | Leu | Gly | Ser | His | Glu | Arg | Gly | Pro | Arg | Ser | Phe | Pro |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Val | Phe | Ser | Pro | Pro | Gly | Pro | Pro | Arg | Lys | Pro | Pro | Ala | Leu | Ser | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Val | Ser | Arg | Met | Phe | Ser | Val | Ala | His | Pro | Ala | Ala | Lys | Val | Pro | Gln |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Pro | Glu | Arg | Leu | Asp | Leu | Val | Tyr | Thr | Ala | Leu | Lys | Arg | Gly | Leu | Thr |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ala | Tyr | Leu | Glu | Val | His | Gln | Gln | Glu | Gln | Glu | Lys | Leu | Gln | Gly | Gln |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| Ile | Arg | Glu | Ser | Lys | Arg | Asn | Ser | Arg | Leu | Gly | Phe | Leu | Tyr | Asp | Leu |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Asp | Lys | Gln | Val | Lys | Ser | Ile | Glu | Arg | Phe | Leu | Arg | Arg | Leu | Glu | Phe |
| | 115 | | 120 | | 125 | | | | | | | | | | |
| His | Ala | Ser | Lys | Ile | Asp | Glu | Leu | Tyr | Glu | Ala | Tyr | Cys | Val | Gln | Arg |
| | 130 | | 135 | | 140 | | | | | | | | | | |
| Arg | Leu | Arg | Asp | Gly | Ala | Tyr | Asn | Met | Val | Arg | Ala | Tyr | Thr | Thr | Gly |
| 145 | | | 150 | | 155 | | | | | | | | | 160 | |
| Ser | Pro | Gly | Ser | Arg | Glu | Ala | Arg | Asp | Ser | Leu | Ala | Glu | Ala | Thr | Arg |
| | | | 165 | | 170 | | | | | | | | | 175 | |
| Gly | His | Arg | Glu | Tyr | Thr | Glu | Val | Gly | Asp | Gly | Gly | Pro | | | |
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<210> 4335

<211> 1211

<212> DNA

<213> Homo sapiens

<400> 4335

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<210> 4336

<211> 325

<212> PRT

<213> Homo sapiens

<400> 4336

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Glu | Arg | Lys | Gly | Gln | Asp | Leu | Ala | Gly | Asp | Gly | Glu | Glu | Trp | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Pro | Leu | Lys | Thr | Phe | Val | Pro | Ser | Val | Ser | Pro | Phe | Gln | Leu | Ala |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Leu | Gly | Ala | Ala | Leu | Val | Asn | Val | Gln | Ile | Pro | Leu | Leu | Leu | Gly | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Val | Glu | Val | Val | Ala | Lys | Tyr | Thr | Arg | Asp | His | Val | Gly | Ser | Phe |
| | | 50 | | | | 55 | | | | 60 | | | | | |
| Met | Thr | Glu | Ser | Gln | Asn | Leu | Ser | Thr | His | Leu | Leu | Ile | Leu | Tyr | Gly |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Val | Gln | Gly | Leu | Leu | Thr | Phe | Gly | Tyr | Leu | Val | Leu | Leu | Ser | His | Val |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Glu | Arg | Met | Ala | Val | Asp | Met | Arg | Arg | Ala | Leu | Phe | Ser | Ser | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Arg | Gln | Asp | Ile | Thr | Phe | Phe | Asp | Ala | Asn | Lys | Thr | Gly | Gln | Leu |
| | | 115 | | | | | | 120 | | | | | 125 | | |
| Val | Ser | Arg | Leu | Thr | Thr | Asp | Val | Gln | Glu | Phe | Lys | Ser | Ser | Phe | Lys |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Leu | Val | Ile | Ser | Gln | Gly | Leu | Arg | Ser | Cys | Thr | Gln | Val | Ala | Gly | Cys |
| 145 | | | | | 150 | | | | 155 | | | | | 160 | |
| Leu | Val | Ser | Leu | Ser | Met | Leu | Ser | Thr | Arg | Leu | Thr | Leu | Leu | Leu | Met |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Val | Ala | Thr | Pro | Ala | Leu | Met | Gly | Val | Gly | Thr | Leu | Met | Gly | Ser | Gly |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Leu | Arg | Lys | Leu | Ser | Arg | Gln | Cys | Gln | Glu | Gln | Ile | Ala | Arg | Ala | Met |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Gly | Val | Ala | Asp | Glu | Ala | Leu | Gly | Asn | Val | Arg | Thr | Val | Arg | Ala | Phe |
| | | 210 | | | | | 215 | | | | 220 | | | | |
| Ala | Met | Glu | Gln | Arg | Glu | Glu | Glu | Arg | Tyr | Gly | Ala | Glu | Leu | Glu | Ala |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Cys | Arg | Cys | Arg | Ala | Glu | Glu | Leu | Gly | Arg | Gly | Ile | Ala | Leu | Phe | Gln |
| | | | 245 | | | | | 250 | | | | | 255 | | |
| Gly | Leu | Ser | Asn | Ile | Ala | Phe | Asn | Cys | Met | Val | Leu | Gly | Thr | Leu | Phe |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ile | Gly | Gly | Ser | Leu | Val | Ala | Gly | Gln | Gln | Leu | Thr | Gly | Gly | Asp | Leu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Met | Ser | Phe | Leu | Val | Ala | Ser | Gln | Thr | Val | Gln | Ser | Phe | Leu | Arg | Val |
| | | 290 | | | | | 295 | | | | 300 | | | | |
| Ala | Pro | Cys | Pro | Asn | Ser | Leu | Pro | Leu | Gln | Ala | Val | Thr | Leu | His | Ala |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Trp | Lys | Asp | His | Pro | | | | | | | | | | | |

325

<210> 4337
 <211> 461
 <212> DNA
 <213> Homo sapiens

<400> 4337
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 360
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 420
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<210> 4338
 <211> 118
 <212> PRT
 <213> Homo sapiens

<400> 4338
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 Thr Trp Phe Pro Ser Ser Gly Ala His Gly Gly Glu Val Glu Gly Gly
 35 40 45
 Arg Arg Glu Gly Ala Thr Cys Cys Ser Val Glu Lys Gln Gln Ser Pro
 50 55 60
 Leu Gln Pro Ala Gln Leu Ala Phe Leu Thr Leu Ser Leu Pro Gly Leu
 65 70 75 80
 Cys Gly Arg Glu Gly Gln Ala Arg Trp Pro Ala Arg Asp Val Val Phe
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 Ser Phe Val Leu Cys Thr Met Pro Gln Lys Asn Ile Leu Leu Ile Cys
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 Asn Gln Asp Asn Ile Ile
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 <212> DNA
 <213> Homo sapiens

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4860

gcctctgcct gccttggtta agcatgagtt aagcagcaaa acgctcctcc atgtctggat
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 4980
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 5100
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 5160
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<210> 4340
 <211> 1088
 <212> PRT
 <213> Homo sapiens

<400> 4340
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 Gly Pro Glu Pro Glu Arg Pro Ser Pro Gly Asp Gly Asn Pro Arg Glu
 35 40 45
 Asn Ser Pro Phe Leu Asn Asn Val Glu Val Glu Gln Glu Ser Phe Phe
 50 55 60
 Glu Gly Lys Asn Met Ala Leu Phe Glu Glu Glu Met Asp Ser Asn Pro
 65 70 75 80
 Met Val Ser Ser Leu Leu Asn Lys Leu Ala Asn Tyr Thr Asn Leu Ser
 85 90 95
 Gln Gly Val Val Glu His Glu Glu Asp Glu Glu Ser Arg Arg Arg Glu
 100 105 110
 Ala Lys Ala Pro Arg Met Gly Thr Phe Ile Gly Val Tyr Leu Pro Cys
 115 120 125
 Leu Gln Asn Ile Leu Gly Val Ile Leu Phe Leu Arg Leu Thr Trp Ile
 130 135 140
 Val Gly Val Ala Gly Val Leu Glu Ser Phe Leu Ile Val Ala Met Cys
 145 150 155 160
 Cys Thr Cys Thr Met Leu Thr Ala Ile Ser Met Ser Ala Ile Ala Thr
 165 170 175
 Asn Gly Val Val Pro Ala Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser
 180 185 190
 Leu Gly Pro Glu Phe Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly
 195 200 205
 Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu Gly Thr Ile Glu Ile Phe
 210 215 220
 Leu Thr Tyr Ile Ser Pro Gly Ala Ala Ile Phe Gln Ala Glu Ala Ala
 225 230 235 240
 Gly Gly Glu Ala Ala Met Leu His Asn Met Arg Val Tyr Gly Thr
 245 250 255
 Cys Thr Leu Val Leu Met Ala Leu Val Val Phe Val Gly Val Lys Tyr

| | | |
|---|-----|-----|
| 260 | 265 | 270 |
| Val Asn Lys Leu Ala Leu Val Phe Leu Ala Cys Val Val Leu Ser Ile | | |
| 275 | 280 | 285 |
| Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser Ala Phe Asp Pro Pro Asp | | |
| 290 | 295 | 300 |
| Ile Pro Val Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg Arg Ser Phe | | |
| 305 | 310 | 315 |
| Asp Ala Cys Val Lys Ala Tyr Gly Ile His Asn Asn Ser Ala Thr Ser | | |
| 325 | 330 | 335 |
| Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser Gln Pro Ser Ala Ala Cys | | |
| 340 | 345 | 350 |
| Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr Glu Ile Gln Gly Ile Pro | | |
| 355 | 360 | 365 |
| Gly Ala Ala Ser Gly Val Phe Leu Glu Asn Leu Trp Ser Thr Tyr Ala | | |
| 370 | 375 | 380 |
| His Ala Gly Ala Phe Val Glu Lys Lys Gly Val Pro Ser Val Pro Val | | |
| 385 | 390 | 395 |
| Ala Glu Glu Ser Arg Ala Ser Ala Leu Pro Tyr Val Leu Thr Asp Ile | | |
| 405 | 410 | 415 |
| Ala Ala Ser Phe Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr | | |
| 420 | 425 | 430 |
| Gly Ile Met Ala Gly Ser Asn Arg Ser Gly Asp Leu Lys Asp Ala Gln | | |
| 435 | 440 | 445 |
| Lys Ser Ile Pro Thr Gly Thr Ile Leu Ala Ile Val Thr Thr Ser Phe | | |
| 450 | 455 | 460 |
| Ile Tyr Leu Ser Cys Ile Val Leu Phe Gly Ala Cys Ile Glu Gly Val | | |
| 465 | 470 | 475 |
| Val Leu Arg Asp Lys Phe Gly Glu Ala Leu Gln Gly Asn Leu Val Ile | | |
| 485 | 490 | 495 |
| Gly Met Leu Ala Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe | | |
| 500 | 505 | 510 |
| Phe Ser Thr Cys Gly Ala Gly Leu Gln Thr Leu Thr Gly Ala Pro Arg | | |
| 515 | 520 | 525 |
| Leu Leu Gln Ala Ile Ala Arg Asp Gly Ile Val Pro Phe Leu Gln Val | | |
| 530 | 535 | 540 |
| Phe Gly His Gly Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu | | |
| 545 | 550 | 555 |
| Thr Val Leu Ile Cys Glu Thr Gly Ile Leu Ile Ala Ser Leu Asp Ser | | |
| 565 | 570 | 575 |
| Val Ala Pro Ile Leu Ser Met Phe Phe Leu Met Cys Tyr Leu Phe Val | | |
| 580 | 585 | 590 |
| Asn Leu Ala Cys Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg | | |
| 595 | 600 | 605 |
| Pro Arg Phe Lys Phe Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser | | |
| 610 | 615 | 620 |
| Leu Cys Leu Ala Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Ser | | |
| 625 | 630 | 635 |
| Ala Met Leu Ile Ala Gly Cys Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly | | |
| 645 | 650 | 655 |
| Ala Glu Lys Glu Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Asn Ala | | |
| 660 | 665 | 670 |
| Ala Arg Tyr Ala Leu Leu Arg Val Glu His Gly Pro Pro His Thr Lys | | |
| 675 | 680 | 685 |
| Asn Trp Arg Pro Gln Val Leu Val Met Leu Asn Leu Asp Ala Glu Gln | | |

690 695 700
 Ala Val Lys His Pro Arg Leu Leu Ser Phe Thr Ser Gln Leu Lys Ala
 705 710 715 720
 Gly Lys Gly Leu Thr Ile Val Gly Ser Val Leu Glu Gly Thr Tyr Leu
 725 730 735
 Asp Lys His Met Glu Ala Gln Arg Ala Glu Glu Asn Ile Arg Ser Leu
 740 745 750
 Met Ser Thr Glu Lys Thr Lys Gly Phe Cys Gln Leu Val Val Ser Ser
 755 760 765
 Ser Leu Arg Asp Gly Met Ser His Leu Ile Gln Ser Ala Gly Leu Gly
 770 775 780
 Gly Leu Lys His Asn Thr Val Leu Met Ala Trp Pro Ala Ser Trp Lys
 785 790 795 800
 Gln Glu Asp Asn Pro Phe Ser Trp Lys Asn Phe Val Asp Thr Val Arg
 805 810 815
 Asp Thr Thr Ala Ala His Gln Ala Leu Leu Val Ala Lys Asn Val Asp
 820 825 830
 Ser Phe Pro Gln Asn Gln Glu Arg Phe Gly Gly Gly His Ile Asp Val
 835 840 845
 Trp Trp Ile Val His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu
 850 855 860
 Leu Arg Gln His Lys Val Trp Arg Lys Cys Arg Met Arg Ile Phe Thr
 865 870 875 880
 Val Ala Gln Val Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Gln
 885 890 895
 Met Phe Leu Tyr His Leu Arg Ile Ser Ala Glu Val Glu Val Val Glu
 900 905 910
 Met Val Glu Asn Asp Ile Ser Ala Phe Thr Tyr Glu Arg Thr Leu Met
 915 920 925
 Met Glu Gln Arg Ser Gln Met Leu Lys Gln Met Gln Leu Ser Lys Asn
 930 935 940
 Glu Gln Glu Arg Glu Ala Gln Leu Ile His Asp Arg Asn Thr Ala Ser
 945 950 955 960
 His Thr Ala Ala Ala Ala Arg Thr Gln Ala Pro Pro Thr Pro Asp Lys
 965 970 975
 Val Gln Met Thr Trp Thr Arg Glu Lys Leu Ile Ala Glu Lys Tyr Arg
 980 985 990
 Ser Arg Asp Thr Ser Leu Ser Gly Phe Lys Asp Leu Phe Ser Met Lys
 995 1000 1005
 Pro Glu Trp Gly Asn Leu Asp Gln Ser Asn Val Arg Arg Met His Thr
 1010 1015 1020
 Ala Val Lys Leu Asn Gly Val Val Leu Asn Lys Ser Gln Asp Ala Gln
 1025 1030 1035 1040
 Leu Val Leu Leu Asn Met Pro Gly Pro Pro Lys Asn Arg Gln Gly Asp
 1045 1050 1055
 Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gly Leu Asn Arg
 1060 1065 1070
 Val Leu Leu Val Arg Gly Gly Gly Arg Glu Val Ile Thr Ile Tyr Ser
 1075 1080 1085

<210> 4341

<211> 693

<212> DNA

<213> Homo sapiens

<400> 4341

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 120
 gacctgaggg agccatatgc atcaagttag tgtttctcca taacagaata ttataagag
 180
 aacatgtata gtgccctctt ttgagttagt ccgacagaca ccaagccctc cttttcacca
 240
 agtcccaggc ttgcattcca gcctcttgag ctctgccctc tctcaggtgg atctttgtgt
 300
 tggaccttac gtttcagcaa cctcaccatg gccacataac ccacaacctt ttaaaacagt
 360
 ttctttcata gcaatccctg tttctgccag acagatctaa aatgggagtt tctcactgtg
 420
 tttatctgat ctgcacactt tatatccagc tgttttggca cttttacgtt ttcttcacct
 480
 ttgggttttg tttgcaaatt cttacacctt ctctccaagc ggagggcaca ctgtggtcaa
 540
 aatcacttat ttattagga aaaagaggta actgttccaa agttagtgtt cctttgttga
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 693

<210> 4342

<211> 103

<212> PRT

<213> Homo sapiens

<400> 4342

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Arg | Leu | Leu | Lys | Arg | Lys | Val | Gln | His | Lys | Asp | Pro | Pro | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Arg | Gly | Gln | Ser | Ser | Arg | Gly | Trp | Asn | Ala | Ser | Leu | Gly | Leu | Gly | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Lys | Glu | Gly | Leu | Val | Ser | Val | Gly | Ile | Thr | Gln | Lys | Arg | Ala | Leu | Tyr |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Met | Phe | Ser | Tyr | Lys | Tyr | Ser | Val | Met | Glu | Lys | His | Ser | Leu | Asp | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Tyr | Gly | Ser | Leu | Arg | Ser | Phe | Phe | Phe | His | Pro | Leu | Phe | Leu | Glu | Lys |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Lys | Phe | Phe | Lys | Ala | Tyr | Asn | Leu | Lys | Ser | Thr | Ser | Thr | Tyr | Ser | Arg |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Asn | Ile | Val | Ala | Phe | Ser | Ile | | | | | | | | | |
| | | | 100 | | | | | | | | | | | | |

<210> 4343

<211> 499

<212> DNA

<213> Homo sapiens

<400> 4343

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 120
 ttcagaacag ggcgcccgcac gttgggcgcg tggacagagt cctccggcgg ccgcgcgcgt
 180
 gggccaggcg gagagaggcg gacggacttc aggggaggcc cgggccacgc cgcggaaact
 240
 acccgactcc ctggaggcgg ccaggaccga ccctgtcccg acaaaatgga gttccccgtg
 300
 tggttcagc tcgcggcgcg ttcccagagc tcctcagtga tccggtttc ggattgttcg
 360
 cctttcatct catttgccgt tgtccaaatt ctaatttaaa actcatgtgt tacttgctgt
 420
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 480
 ttaccacaat aaaaataaa
 499

<210> 4344

<211> 118

<212> PRT

<213> Homo sapiens

<400> 4344

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Ser | Arg | Pro | Arg | Leu | Pro | Pro | Ser | Pro | Pro | Gln | Arg | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Arg | Val | Val | Arg | Gly | Arg | Gly | Pro | Phe | Ala | Phe | Arg | Thr | Gly | Arg | Pro |
| | | | 20 | | | | 25 | | | | | | 30 | | |
| Thr | Leu | Gly | Ala | Trp | Thr | Glu | Ser | Ser | Gly | Gly | Arg | Ala | Ala | Gly | Pro |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Gly | Gly | Glu | Arg | Arg | Thr | Asp | Phe | Arg | Gly | Gly | Pro | Gly | His | Ala | Ala |
| | 50 | | | | 55 | | | | | | 60 | | | | |
| Glu | Thr | Thr | Arg | Leu | Pro | Gly | Gly | Gly | Gln | Asp | Arg | Pro | Cys | Pro | Asp |
| 65 | | | | 70 | | | | 75 | | | | | 80 | | |
| Lys | Met | Glu | Phe | Pro | Val | Trp | Leu | Gln | Leu | Ala | Ala | Arg | Ser | Gln | Ser |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Ser | Ser | Val | Ile | Arg | Leu | Ser | Asp | Cys | Ser | Pro | Phe | Ile | Ser | Phe | Ala |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| Val | Val | Gln | Ile | Leu | Ile | | | | | | | | | | |
| | | | 115 | | | | | | | | | | | | |

<210> 4345

<211> 349

<212> DNA

<213> Homo sapiens

<400> 4345

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 120
 cgtctgcatg agcagaagct ggtgcagcat gtggtgtctc agaactgtga cgggctccac
 180

ctgaggagtg ggctgncgcg cacggccatc tccgagctcc acgggaacat gtacattgaa
 240
 ggagtacgtg cgggtgttcg atgtgacgga ggcactgcc ctccacagac accagacagg
 300
 ccggacctgc cacaagtgtg ggacccagct gcgggacacc attgtgcac
 349

<210> 4346
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 4346
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 Gln Lys Gly Arg Ser Val Ser Ala Ala Asp Xaa Glu Arg Ala Glu Pro
 20 25 30
 Thr Leu Thr His Met Ser Ile Thr Arg Leu His Glu Gln Lys Leu Val
 35 40 45
 Gln His Val Val Ser Gln Asn Cys Asp Gly Leu His Leu Arg Ser Gly
 50 55 60
 Leu Xaa Arg Thr Ala Ile Ser Glu Leu His Gly Asn Met Tyr Ile Glu
 65 70 75 80
 Gly Val Arg Ala Gly Val Arg Cys Asp Gly Ala His Cys Pro Pro Gln
 85 90 95
 Thr Pro Asp Arg Pro Asp Leu Pro Gln Val Trp Asp Pro Ala Ala Gly
 100 105 110
 His His Cys Ala
 115

<210> 4347
 <211> 353
 <212> DNA
 <213> Homo sapiens

<400> 4347
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 120
 ccccggggct cgcgcgacgc gggccagct gcacaaagcc gtccgctccg tcccgcagag
 180
 gccaggcagt gcagaggcag gagccgccgt cgggtagcga gatcttcact gccgagccca
 240
 agcgcgcgcc cagggcggtg agggcgccgc ggcccaggcg gcagcgctgg gtgccccggt
 300
 ctctagcgtc taagggtagc agctttaaga gcggcccttc agggaaggga tcc
 353

<210> 4348
 <211> 72
 <212> PRT
 <213> Homo sapiens

<400> 4348

Asp Ser Ser Gly Ile Ser Thr Pro Arg Pro Pro Pro Arg Gly Ser Arg
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 Ala Ala Gly Pro Ala Ala Gln Ser Arg Pro Leu Arg Pro Ala Glu Ala
 20 25 30
 Arg Gln Cys Arg Gly Arg Ser Arg Arg Val Ala Arg Ser Ser Leu
 35 40 45
 Pro Ser Pro Ser Ala Arg Pro Gly Arg Gly Gly Arg Pro Gly Pro Gly
 50 55 60
 Gly Ser Ala Gly Cys Pro Gly Leu
 65 70

<210> 4349

<211> 2040

<212> DNA

<213> Homo sapiens

<400> 4349

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 120
 ctcaccggca ccaggccctc gtgtggcccc cgactctggc acggaacctg ccctagtggc
 180
 caacatggac ctggggccac cctgctggcc gagggtcagg gtcctctgtg caggcagtgg
 240
 ggaggggggtc ccaggttccc tgacagaggg aggcagggca cgggggagcc tgcctcacc
 300
 agcggacagc acgggcccgg gcagacagag caggggacct agggccacag accggtacag
 360
 ggttccacca cccggggaca caggcccaag caccgtgcc ctaagatggg gtctgcagag
 420
 gcaaagcctt gctgcagcct ctcccactct gcgaggatgg cgggggtctg ctatgtgggt
 480
 tgcgggggtt atcctggtat gcgggagctg ccttccaata aggctgggga acccaagcct
 540
 gagtctgggt gctcagtggc cgagagcact ggtgtgggct gggagggcac acgcagaggg
 600
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 720
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 780
 gctgatggca gggaggggca gctgaacagc acccgggtg gctgagactg cctcccagtc
 840
 cacgtgggaa ccacggcctc aagagccaca ggctgagctg cggggaggggt gggctgaggg
 900
 gccaccactg gtcaccgggt ggattctgct ggtcagagat gagagcagaa gcccctagct
 960
 gcctcaggca ctggaggggt gggcagggag ctggtgcttc aagaattgag ggcagggaca
 1020
 cgaccacctc agggccctgc agtgctggct ggggaagcaa gcttttacac acggcccgc
 1080

ttgctcggag gtgccacggt gtttgaaatg aagcctgggg ggacagactc aggcaggcag
 1140
 gggaagctcc tttctgggca cccctggacc ccagtggggc cggaaggaga tgcagacagg
 1200
 cctectcaca accacccgca acgcgttcgg atgcccctca gctccaggca ccatgcccc
 1260
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 1320
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 1380
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 1440
 ccaaggacag aggacgtcag gaaggaaagg cgggtgcaag cctcctggtg ccaggcctgc
 1500
 accaccagc gagcacagtc ttcattggct gccagtgtct gaaacctgga accctcgcct
 1560
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 1620
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 1680
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 1740
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 1800
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 1860
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 1920
 gcaacaacag ctaggaaaat agaatacaaa aatctggtac aggaaacaga ggcggcacag
 1980
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 2040

<210> 4350

<211> 113

<212> PRT

<213> Homo sapiens

<400> 4350

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Phe | Phe | Phe | Leu | Arg | Tyr | Lys | Asn | Leu | Tyr | Leu | Tyr | Tyr | Asn | Asp |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Ile | Arg | Thr | Gln | His | Gly | Pro | His | Gly | Gly | Gln | Val | Ala | Gly | Gly | Pro |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Phe | Pro | Pro | Leu | Ala | His | Ala | Pro | Leu | Thr | Gly | Thr | Arg | Pro | Ser | Cys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Pro | Arg | Leu | Trp | His | Gly | Thr | Cys | Pro | Ser | Ala | Gln | His | Gly | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gly | Ala | Thr | Leu | Leu | Ala | Glu | Gly | Gln | Gly | Pro | Leu | Cys | Arg | Gln | Trp |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gly | Gly | Gly | Pro | Arg | Phe | Pro | Asp | Arg | Gly | Arg | Gln | Gly | Thr | Gly | Glu |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Pro | Ala | Ser | Pro | Ser | Gly | Gln | His | Gly | Pro | Gly | Gln | Thr | Glu | Gln | Gly |
| | | | 100 | | | | | 105 | | | | | | 110 | |
| Pro | | | | | | | | | | | | | | | |

<210> 4351
<211> 4703
<212> DNA
<213> Homo sapiens

<400> 4351
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120
ctggttgca acacatattg aagaaatgta agcaaaatac agaaagtgat gattttcaaa
180
aggaagagaa gaaactcctt ttcaacaac actttatata atttattaat gcagtataca
240
ttagatctaa aatctgcagt ttctaagcac accatgttta gatctttcag atccttctgc
300
agttaggt tatttctaca gaggtacctt taagtgaatg aataccacat tctgtaattc
360
ctgaaaatat agtacagagt gaaatgattt aaatataatt taggcacata ttgattatga
420
aaatagatta tctctcaata caatacttct ctgtcttggg aaaaataata aagcaaagaa
480
aataattcat ttctgaagtt gctttccttc acttgtaaag gtctgatctc ctcccactat
540
gcatatgtac cctttactgt taaggaaagc tttgcatatg tagatataga agaataagct
600
acgtaaatac taaagatatg tcatttctcc aaaggagaca caggtgggtt tcaatgatcc
660
cttgccat gttgatgagt ctgtagaatt cagaacccat ttggacacag ctaatatccc
720
tgctcttggg gtagaaaata aggacaccaa gtcattggta gggaggtaca ggcccttctc
780
ctgctgctgc agagagagaa tgactcaaga aaattgggct aaaatttggt taaaaaaaaa
840
aaaccacaaa aaaataagta aaagaatcac aggtgctgac tgattgataa ttacatcttg
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gaccagccaa atgcctttat ttttacgtct attttttggg tggctgtaat caaatgtgtg
960
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1020
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1080
tatctatttc taagctggcc ctatgtaaac tatttggtat ttgaattaaa tgaatattaa
1140
tgatgcacct tggttttttt ggttttgaag tatcttcta tgcttggtgct gactgtatga
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1260
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1380

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1440
cctaaaaagt aaacattata aaaatgaacc tgaaaagagt cttagggagt ctgatctcac
1500
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<212> PRT

<213> Homo sapiens

<400> 4354

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| Met | Ser | Ala | Thr | Val | Val | Asp | Ala | Val | Asn | Ala | Ala | Pro | Leu | Ser | Gly | 1 | 5 | 10 | 15 |
| Ser | Lys | Glu | Met | Ser | Leu | Glu | Glu | Pro | Lys | Lys | Met | Thr | Arg | Glu | Asp | 20 | 25 | 30 | |
| Trp | Arg | Lys | Lys | Lys | Glu | Leu | Glu | Glu | Gln | Arg | Lys | Leu | Gly | Asn | Ala | 35 | 40 | 45 | |
| Pro | Ala | Glu | Val | Asp | Glu | Glu | Gly | Lys | Asp | Ile | Asn | Pro | His | Ile | Pro | 50 | 55 | 60 | |
| Gln | Tyr | Ile | Ser | Ser | Val | Pro | Trp | Tyr | Ile | Asp | Pro | Ser | Lys | Arg | Pro | 65 | 70 | 75 | 80 |
| Thr | Leu | Lys | His | Gln | Arg | Pro | Gln | Pro | Glu | Lys | Gln | Lys | Gln | Phe | Ser | 85 | 90 | 95 | |
| Ser | Ser | Gly | Glu | Trp | Tyr | Lys | Arg | Gly | Val | Lys | Glu | Asn | Ser | Ile | Ile | 100 | 105 | 110 | |
| Thr | Lys | Tyr | Arg | Lys | Gly | Ala | Cys | Glu | Asn | Cys | Gly | Ala | Met | Thr | His | 115 | 120 | 125 | |
| Lys | Lys | Lys | Asp | Cys | Phe | Glu | Arg | Pro | Arg | Arg | Val | Gly | Ala | Lys | Phe | 130 | 135 | 140 | |
| Thr | Gly | Thr | Asn | Ile | Ala | Pro | Asp | Glu | His | Val | Gln | Pro | Gln | Leu | Met | 145 | 150 | 155 | 160 |
| Phe | Asp | Tyr | Asp | Gly | Lys | Arg | Asp | Arg | Trp | Asn | Gly | Tyr | Asn | Pro | Glu | 165 | 170 | 175 | |
| Glu | His | Met | Lys | Ile | Val | Glu | Glu | Tyr | Ala | Lys | Val | Asp | Leu | Ala | Lys | 180 | 185 | 190 | |
| Arg | Thr | Leu | Lys | Ala | Gln | Lys | Leu | Gln | Glu | Glu | Leu | Ala | Ser | Gly | Lys | 195 | 200 | 205 | |
| Leu | Val | Glu | Gln | Ala | Asn | Ser | Pro | Lys | His | Gln | Trp | Gly | Glu | Glu | Glu | 210 | 215 | 220 | |
| Pro | Asn | Ser | Gln | Thr | Glu | Lys | Asp | His | Asn | Ser | Glu | Asp | Glu | Asp | Glu | 225 | 230 | 235 | 240 |
| Asp | Lys | Tyr | Ala | Asp | Asp | Ile | Asp | Met | Pro | Gly | Gln | Asn | Phe | Asp | Ser | 245 | 250 | 255 | |
| Lys | Arg | Arg | Ile | Thr | Val | Arg | Asn | Leu | Arg | Ile | Arg | Glu | Asp | Ile | Ala | 260 | 265 | 270 | |
| Lys | Tyr | Leu | Arg | Asn | Leu | Asp | Pro | Asn | Ser | Ala | Tyr | Tyr | Asp | Pro | Lys | 275 | 280 | 285 | |
| Thr | Arg | Ala | Met | Arg | Glu | Asn | Pro | Tyr | Ala | Asn | Ala | Gly | Lys | Asn | Pro | 290 | 295 | 300 | |
| Asp | Glu | Val | Ser | Tyr | Ala | Gly | Asp | Asn | Phe | Val | Arg | Tyr | Thr | Gly | Asp | 305 | 310 | 315 | 320 |
| Thr | Ile | Ser | Met | Ala | Gln | Thr | Gln | Leu | Phe | Ala | Trp | Glu | Ala | Tyr | Asp | | | | |

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 Lys Glu Ser Ile Leu Glu Lys Tyr Gly Gly Gln Glu His Leu Asp Ala
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 Ser Lys Tyr Glu Asp Val Lys Ile His Asn His Thr His Ile Trp
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 Gly Ser Tyr Trp Lys Glu Gly Arg Trp Gly Tyr Lys Cys Cys His Ser
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 485 490 495
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 Ser Asp Ser Asp Asp Glu Glu Lys Lys His Glu Lys Leu Lys Lys Ala
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<211> 509

<212> PRT

<213> Homo sapiens

<400> 4356

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| 20 | 25 | 30 | |
| Arg Val Thr Pro Ala Val Val Ala Tyr Ser Glu Asn Glu Glu Ile Val | | | |
| 35 | 40 | 45 | |
| Gly Leu Ala Ala Lys Gln Ser Arg Ile Arg Asn Ile Ser Asn Thr Val | | | |
| 50 | 55 | 60 | |
| Met Lys Val Lys Gln Ile Leu Gly Arg Ser Ser Ser Asp Pro Gln Ala | | | |
| 65 | 70 | 75 | 80 |
| Gln Lys Tyr Ile Ala Glu Ser Lys Cys Leu Val Ile Glu Lys Asn Gly | | | |
| 85 | 90 | 95 | |
| Lys Leu Arg Tyr Glu Ile Asp Thr Gly Glu Glu Thr Lys Phe Val Asn | | | |
| 100 | 105 | 110 | |
| Pro Glu Asp Val Ala Arg Leu Ile Phe Ser Lys Met Lys Glu Thr Ala | | | |
| 115 | 120 | 125 | |
| His Ser Val Leu Gly Ser Asp Ala Asn Asp Val Val Ile Thr Val Pro | | | |
| 130 | 135 | 140 | |
| Phe Asp Phe Gly Glu Lys Gln Lys Asn Ala Leu Gly Glu Ala Ala Arg | | | |
| 145 | 150 | 155 | 160 |
| Ala Ala Gly Phe Asn Val Leu Arg Leu Ile His Glu Pro Ser Ala Ala | | | |
| 165 | 170 | 175 | |
| Leu Leu Ala Tyr Gly Ile Gly Gln Asp Ser Pro Thr Gly Lys Ser Asn | | | |
| 180 | 185 | 190 | |
| Ile Leu Val Phe Lys Leu Gly Gly Thr Ser Leu Ser Leu Ser Val Met | | | |
| 195 | 200 | 205 | |
| Glu Val Asn Ser Gly Ile Tyr Arg Val Leu Ser Thr Asn Thr Asp Asp | | | |
| 210 | 215 | 220 | |
| Asn Ile Gly Gly Ala His Phe Thr Glu Thr Leu Ala Gln Tyr Leu Ala | | | |
| 225 | 230 | 235 | 240 |
| Ser Glu Phe Gln Arg Ser Phe Lys His Asp Val Arg Gly Asn Ala Arg | | | |
| 245 | 250 | 255 | |
| Ala Met Met Lys Leu Thr Asn Ser Ala Glu Val Ala Lys His Ser Leu | | | |
| 260 | 265 | 270 | |
| Ser Thr Leu Gly Ser Ala Asn Cys Phe Leu Asp Ser Leu Tyr Glu Gly | | | |
| 275 | 280 | 285 | |
| Gln Asp Phe Asp Cys Asn Val Ser Arg Ala Arg Phe Glu Leu Leu Cys | | | |
| 290 | 295 | 300 | |
| Ser Pro Leu Phe Asn Lys Cys Ile Glu Ala Ile Arg Gly Leu Leu Asp | | | |
| 305 | 310 | 315 | 320 |
| Gln Asn Gly Phe Thr Ala Asp Asp Ile Asn Lys Val Val Leu Cys Gly | | | |
| 325 | 330 | 335 | |
| Gly Ser Ser Arg Ile Pro Lys Leu Gln Gln Leu Ile Lys Asp Leu Phe | | | |
| 340 | 345 | 350 | |
| Pro Ala Val Glu Leu Leu Asn Ser Ile Pro Pro Asp Glu Val Ile Pro | | | |
| 355 | 360 | 365 | |
| Ile Gly Ala Ala Ile Glu Ala Gly Ile Leu Ile Gly Lys Glu Asn Leu | | | |
| 370 | 375 | 380 | |
| Leu Val Glu Asp Ser Leu Met Ile Glu Cys Ser Ala Arg Asp Ile Leu | | | |
| 385 | 390 | 395 | 400 |
| Val Lys Gly Val Asp Glu Ser Gly Ala Ser Arg Phe Thr Val Leu Phe | | | |
| 405 | 410 | 415 | |
| Pro Ser Gly Thr Pro Leu Pro Ala Arg Arg Gln His Thr Leu Gln Ala | | | |
| 420 | 425 | 430 | |
| Pro Gly Ser Ile Ser Ser Val Cys Leu Glu Leu Tyr Glu Ser Asp Gly | | | |

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 50 55 60
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<212> DNA

<213> Homo sapiens

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<210> 4360

<211> 670

<212> PRT

<213> Homo sapiens

<400> 4360

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Asn | Leu | Pro | Thr | Pro | Asp | Val | Thr | Thr | Gly | Thr | Arg | Met | Glu | Thr |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Thr | Phe | Gly | Pro | Ala | Phe | Ser | Ala | Val | Thr | Thr | Ile | Thr | Lys | Ala | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Thr | Ser | Thr | Tyr | Lys | Gln | His | Cys | Arg | Thr | Pro | Ser | Ser | Ser | Ser |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Thr | Leu | Ala | Tyr | Ser | Pro | Arg | Asp | Glu | Glu | Asp | Ser | Met | Pro | Pro | Ile |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Thr | Pro | Arg | Arg | Ser | Asp | Ser | Ala | Ile | Ser | Val | Arg | Ser | Leu | His |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Ser | Glu | Ser | Ser | Met | Ser | Leu | Arg | Ser | Thr | Phe | Ser | Leu | Pro | Glu | Glu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Glu | Glu | Glu | Pro | Glu | Pro | Leu | Val | Phe | Ala | Glu | Gln | Pro | Ser | Val | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Cys | Cys | Gln | Leu | Cys | Cys | Ser | Val | Phe | Lys | Asp | Pro | Val | Ile | Thr |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Cys | Gly | His | Thr | Phe | Cys | Arg | Arg | Cys | Ala | Leu | Lys | Ser | Glu | Lys |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Cys | Pro | Val | Asp | Asn | Val | Lys | Leu | Thr | Val | Val | Val | Asn | Asn | Ile | Ala |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Val | Ala | Glu | Gln | Ile | Gly | Glu | Leu | Phe | Ile | His | Cys | Arg | His | Gly | Cys |

3555

| | | |
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| 610 | 615 | 620 |
| Leu Arg Val Trp Ser Met Asp Asn Met Ile Cys Thr Gln Thr Leu Leu | | |
| 625 | 630 | 635 |
| Arg His Gln Gly Ser Val Thr Ala Leu Ala Val Ser Arg Gly Arg Leu | | 640 |
| | 645 | 650 |
| Phe Ser Gly Ala Val Asp Ser Thr Val Lys Val Trp Thr Cys | | 655 |
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<210> 4361
 <211> 574
 <212> DNA
 <213> Homo sapiens

<400> 4361
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 420
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<210> 4362
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 4362
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 Asp Met Gln Gln His Glu Cys Ala Met Ser Trp Arg Ala His Tyr Gly
 35 40 45
 Glu Val Tyr Ser Val Glu Phe Ser Tyr Asp Glu Asn Thr Val Tyr Ser
 50 55 60
 Ile Gly Glu Asp Gly Lys Val Gly Gly Ser Arg Ile Gln Ile Arg Glu
 65 70 75 80
 His Arg Asp Asp Met Trp Ala Gly Cys Arg Leu Trp Pro Tyr Leu Leu
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105
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<210> 4363
 <211> 1222
 <212> DNA
 <213> Homo sapiens

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<211> 75
 <212> PRT
 <213> Homo sapiens

<400> 4364
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<210> 4365
 <211> 469
 <212> DNA
 <213> Homo sapiens

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<210> 4366
 <211> 156
 <212> PRT
 <213> Homo sapiens

<400> 4366
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 35 40 45
 Val Ala Ile Gly Gly Thr Ser Phe Pro Thr Tyr Tyr Arg Ser Met Tyr
 50 55 60
 Pro Lys Glu Val Ile Met Thr Gly Asp Met Met Leu Glu Lys Val Tyr

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Arg | Glu | Gly | Asp | Lys | Leu | Val | Ala | Val | Leu | Glu | Asn | Glu | Tyr | Thr | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Lys | Glu | Glu | Arg | Val | Val | Asp | Gln | Val | Val | Val | Glu | Asn | Gly | Val |
| | | | | 100 | | | | 105 | | | | | 110 | | |
| Arg | Pro | Asp | Glu | Glu | Ile | Tyr | Tyr | Gly | Leu | Lys | Glu | Gly | Ser | Arg | Asn |
| | | | | 115 | | | | 120 | | | | | 125 | | |
| Lys | Gly | Gln | Ile | Asp | Val | Glu | Ala | Leu | Phe | Ala | Ile | Lys | Pro | Gln | Pro |
| | | | | 130 | | | | 135 | | | | | 140 | | |
| Ser | Leu | Asn | Thr | Leu | Asn | Glu | Glu | Ala | Ala | Gly | Asp | | | | |
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<210> 4367

<211> 852

<212> DNA

<213> Homo sapiens

<400> 4367

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<210> 4368

<211> 102

<212> PRT

<213> Homo sapiens

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<210> 4369
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<212> DNA
<213> Homo sapiens
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 aatctgatta gcttcacaga ctgagtctcc acaacaccaa aatatccaga tgtaaaccac
 1140
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<210> 4370
 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 4370
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 Trp Ala Phe Lys Met Asp Tyr Glu Thr Thr Glu Lys Glu Val Ala Glu
 35 40 45
 Pro Leu Leu Asp Leu Lys Glu Gly Ile Asp Gln Leu Glu Asn Asn Lys
 50 55 60
 Thr Leu Gly Phe Ile Leu Ser Thr Leu Leu Ala Ile Gly Asn Phe Leu
 65 70 75 80
 Asn Gly Thr Asn Ala Lys Ala Phe Glu Leu Ser Tyr Leu Glu Lys Val
 85 90 95
 Pro Glu Val Lys Asp Thr Val His Lys Gln Ser Leu Leu His His Val
 100 105 110
 Cys Thr Met Val Val Glu Asn Phe Pro Asp Ser Ser Asp Leu Tyr Ser
 115 120 125
 Glu Ile Gly Ala Ile Thr Arg Ser Ala Lys Val Asp Phe Asp Gln Leu
 130 135 140
 Gln Asp Asn Leu Cys Gln Met Glu Arg Arg Cys Lys Ala Ser Trp Asp
 145 150 155 160
 His Leu Lys Ala Ile Ala Lys His Glu Met Lys Pro Val Leu Lys Gln
 165 170 175
 Arg Met Ser Glu Phe Leu Lys Asp Cys Ala Glu Arg Ile Ile Ile Leu
 180 185 190
 Lys Ile Val His Arg Arg Ile Ile Asn Arg Phe His Ser Phe Leu Leu
 195 200 205
 Phe Met Gly His Pro Pro Tyr Ala Ile Arg Glu Val Asn Ile Asn Lys
 210 215 220
 Phe Cys Arg Ile Ile Ser Glu Phe Ala Leu Glu Tyr Arg Thr Thr Arg
 225 230 235 240
 Glu Arg Val Leu Gln Gln Lys Gln Lys Arg Ala Asn His Arg Glu Arg
 245 250 255
 Asn Lys Thr Arg Gly Lys Met Ile Thr Asp Ser Gly Lys Phe Ser Gly
 260 265 270
 Ser Ser Pro Ala Pro Pro Ser Gln Pro Gln Gly Leu Ser Tyr Ala Glu

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 275 | | 280 | | 285 | | | | | | | | | | |
| Asp | Ala | Ala | Glu | His | Glu | Asn | Met | Lys | Ala | Val | Leu | Lys | Thr | Ser | Ser |
| | 290 | | | | 295 | | | | | | 300 | | | | |
| Pro | Ser | Arg | Ser | Pro | Leu | His | Ile | Pro | Ser | Pro | Ser | Cys | Gln | Leu | Cys |
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| Phe | Ser | | | | | | | | | | | | | | |

<210> 4371

<211> 907

<212> DNA

<213> Homo sapiens

<400> 4371

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<210> 4372

<211> 302

<212> PRT

<213> Homo sapiens

<400> 4372

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Asn Leu Glu Asn Ala Lys Arg Phe Ala Ile Asp Ile Gly Gly Ser Leu
      35           40           45
Thr Lys Leu Ala Tyr Tyr Ser Thr Val Gln His Lys Val Ala Lys Val
      50           55           60
Arg Ser Phe Asp His Ser Gly Lys Asp Thr Glu Arg Glu His Glu Pro
      65           70           75           80
Pro Tyr Glu Ile Ser Val Gln Glu Glu Ile Thr Ala Arg Leu His Phe
      85           90           95
Ile Lys Phe Glu Asn Thr Tyr Ile Glu Ala Cys Leu Asp Phe Ile Lys
      100          105          110
Asp His Leu Val Asn Thr Glu Thr Lys Val Ile Gln Ala Thr Gly Gly
      115          120          125
Gly Ala Tyr Lys Phe Lys Asp Leu Ile Glu Glu Lys Leu Arg Leu Lys
      130          135          140
Val Asp Lys Glu Asp Val Met Thr Cys Leu Ile Lys Gly Cys Asn Phe
      145          150          155          160
Val Leu Lys Asn Ile Pro His Glu Ala Phe Val Tyr Gln Lys Asp Ser
      165          170          175
Asp Pro Glu Phe Arg Phe Gln Thr Asn His Pro His Ile Phe Pro Tyr
      180          185          190
Leu Leu Val Asn Ile Gly Ser Gly Val Ser Ile Val Lys Val Glu Thr
      195          200          205
Glu Asp Arg Phe Glu Trp Val Gly Gly Ser Ser Ile Gly Gly Gly Thr
      210          215          220
Phe Trp Gly Leu Gly Ala Leu Leu Thr Lys Thr Lys Lys Phe Asp Glu
      225          230          235          240
Leu Leu His Leu Ala Ser Arg Gly Gln His Ser Asn Val Asp Met Leu
      245          250          255
Val Arg Asp Val Tyr Gly Gly Ala His Gln Thr Leu Gly Leu Ser Gly
      260          265          270
Asn Leu Ile Ala Ser Ser Phe Gly Lys Ser Ala Thr Ala Asp Gln Glu
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Phe Ser Lys Glu Asp Met Ala Lys Ser Leu Leu His Met Ile
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<210> 4373

<211> 1017

<212> DNA

<213> Homo sapiens

<400> 4373

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<210> 4374

<211> 272

<212> PRT

<213> Homo sapiens

<400> 4374

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 Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
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 Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
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 Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
 65 70 75 80
 Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
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 Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
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 Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
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<210> 4375
<211> 1966
<212> DNA
<213> Homo sapiens
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<210> 4376

<211> 399

<212> PRT

<213> Homo sapiens

<400> 4376

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| Lys | Val | Pro | Ala | Leu | Tyr | Thr | Thr | Thr | Ser | Gly | Arg | Cys | Ser | Trp | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asp | Phe | Leu | Met | Phe | Leu | Ser | Thr | Leu | Ser | Arg | Tyr | Ser | Ser | Ser | Ser |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Val | Pro | His | Ser | Ser | Ser | Thr | Phe | Arg | Leu | Thr | Ala | Ser | Phe | Gly | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Gly | Pro | Gly | Met | Leu | His | Thr | Thr | Gln | Leu | Tyr | Gln | His | Val | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Thr | Arg | Trp | Pro | Ile | Val | Tyr | Ser | Pro | Arg | Tyr | Asn | Ile | Thr | Phe |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Met | Gly | Leu | Glu | Lys | Leu | His | Pro | Phe | Asp | Ala | Gly | Lys | Trp | Gly | Lys |
| | | | | 85 | | | | 90 | | | | | 95 | | |
| Val | Ile | Asn | Phe | Leu | Lys | Glu | Glu | Lys | Leu | Leu | Ser | Asp | Ser | Met | Leu |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Val | Glu | Ala | Arg | Glu | Ala | Ser | Glu | Glu | Asp | Leu | Leu | Val | Val | His | Thr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Arg | Arg | Tyr | Leu | Asn | Glu | Leu | Lys | Trp | Ser | Phe | Ala | Val | Ala | Thr | Ile |

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 Lys Val Leu Arg Pro Leu Arg Thr Gln Thr Gly Gly Thr Ile Met Ala
 165 170 175
 Gly Lys Leu Ala Val Glu Arg Gly Trp Ala Ile Asn Val Gly Gly Gly
 180 185 190
 Phe His His Cys Ser Ser Asp Arg Gly Gly Gly Phe Cys Ala Tyr Ala
 195 200 205
 Asp Ile Thr Leu Ala Ile Lys Phe Leu Phe Glu Arg Val Glu Gly Ile
 210 215 220
 Ser Arg Ala Thr Ile Ile Asp Leu Asp Ala His Gln Gly Asn Gly His
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 Glu Arg Asp Phe Met Asp Asp Lys Cys Val Thr Cys Met Asp Val Tyr
 245 250 255
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 260 265 270
 Arg Lys Val Glu Leu Glu Trp Gly Thr Glu Asp Asp Glu Tyr Leu Asp
 275 280 285
 Lys Val Glu Arg Asn Ile Lys Lys Ser Leu Gln Glu His Leu Pro Asp
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 Val Val Val Tyr Asn Ala Gly Thr Asp Ile Leu Glu Gly Asp Arg Leu
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 325 330 335
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 Ser Gly Gly Tyr Gln Lys Arg Thr Ala Arg Ile Ile Ala Asp Ser Ile
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<210> 4377

<211> 812

<212> DNA

<213> Homo sapiens

<400> 4377

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<210> 4378

<211> 233

<212> PRT

<213> Homo sapiens

<400> 4378

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 Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln Ala Gln Leu
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 Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys Ala Leu Asp Leu
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 Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu Ala Leu Pro
 85 90 95
 Ala Asp Gly Arg Val Val Thr Cys Glu Val Asp Ala Gln Pro Pro Glu
 100 105 110
 Leu Gly Arg Pro Leu Trp Arg Gln Ala Glu Ala Glu His Lys Ile Arg
 115 120 125
 Leu Arg Leu Lys Pro Ala Leu Glu Thr Leu Asp Glu Leu Leu Ala Ala
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 Gly Glu Ala Gly Thr Phe Asp Val Ala Val Val Asp Ala Asp Lys Glu
 145 150 155 160
 Asn Cys Ser Ala Tyr Tyr Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly
 165 170 175
 Gly Ile Leu Ala Val Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln
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 Pro Pro Lys Gly Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu
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<210> 4379

<211> 2347

<212> DNA

<213> Homo sapiens

<400> 4379

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<210> 4380

<211> 652

<212> PRT

<213> Homo sapiens

<400> 4380

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| Leu | Phe | Leu | Arg | Phe | Leu | Cys | Ser | Arg | Phe | Pro | Arg | Gly | Ala | Gln | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Gly | Ala | Leu | Arg | Thr | Leu | Ser | Leu | Leu | Ala | Ala | Gln | Gly | Leu | Trp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Gln | Thr | Ser | Val | Leu | His | Arg | Glu | Asp | Leu | Glu | Arg | Leu | Gly | Val |
| | | 50 | | | | 55 | | | | 60 | | | | | |
| Gln | Glu | Ser | Asp | Leu | Arg | Leu | Phe | Leu | Asp | Gly | Asp | Ile | Leu | Arg | Gln |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Arg | Val | Ser | Lys | Gly | Cys | Tyr | Ser | Phe | Ile | His | Leu | Ser | Phe | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Gln | Phe | Leu | Thr | Ala | Leu | Phe | Tyr | Thr | Leu | Glu | Lys | Glu | Glu | Glu | Glu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asp | Arg | Asp | Gly | His | Thr | Trp | Asp | Ile | Gly | Asp | Val | Gln | Lys | Leu | Leu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ser | Gly | Val | Glu | Arg | Leu | Arg | Asn | Pro | Asp | Leu | Ile | Gln | Ala | Gly | Tyr |

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 Cys Asp Ile Ser Cys Lys Gly Gly His Ser Thr Val Thr Asp Leu Gln
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 Glu Leu Leu Gly Cys Leu Tyr Glu Ser Gln Glu Glu Glu Leu Val Lys
 195 200 205
 Glu Val Met Ala Gln Phe Lys Glu Ile Ser Leu His Leu Asn Ala Val
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 Asp Val Val Pro Ser Ser Phe Cys Val Lys His Cys Arg Asn Leu Gln
 225 230 235 240
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 245 250 255
 Ala Ser Glu Ser Asp Ala Glu Val Glu Arg Ser Gln Asp Asp Gln His
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 275 280 285
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 305 310 315 320
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 325 330 335
 Xaa Pro Xaa Ala Leu Arg Gly His Lys Thr Val Thr Tyr Leu Thr Leu
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 Gln Gly Asn Asp Gln Asp Asp Met Phe Pro Ala Leu Cys Glu Val Leu
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 385 390 395 400
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 405 410 415
 Gly Ala Lys Leu Leu Tyr Thr Thr Leu Arg His Pro Lys Cys Phe Leu
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1080

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<210> 4382

<211> 325

<212> PRT

<213> Homo sapiens

<400> 4382

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| Met | Ala | Gln | Tyr | Lys | Gly | Thr | Met | Arg | Glu | Ala | Gly | Arg | Ala | Met | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Leu | Lys | Lys | Arg | Glu | Arg | Gln | Arg | Glu | Gln | Met | Glu | Val | Leu | Lys |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Gln | Arg | Ile | Ala | Glu | Glu | Thr | Ile | Leu | Lys | Ser | Gln | Val | Asp | Lys | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | Ser | Ala | His | Tyr | Asp | Ala | Val | Glu | Ala | Glu | Leu | Lys | Ser | Ser | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Val | Gly | Leu | Val | Thr | Leu | Asn | Asp | Met | Lys | Ala | Arg | Gln | Glu | Ala | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Val | Arg | Glu | Arg | Glu | Arg | Gln | Leu | Ala | Lys | Arg | Gln | His | Leu | Glu | Glu |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Gln | Arg | Leu | Gln | Gln | Glu | Arg | Gln | Arg | Glu | Gln | Glu | Gln | Arg | Arg | Glu |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Arg | Lys | Arg | Lys | Ile | Ser | Cys | Leu | Ser | Phe | Ala | Leu | Asp | Asp | Leu | Asp |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asp | Gln | Ala | Asp | Ala | Ala | Glu | Ala | Arg | Arg | Ala | Gly | Asn | Leu | Gly | Lys |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Asn | Pro | Asp | Val | Asp | Thr | Ser | Phe | Leu | Pro | Asp | Arg | Asp | Arg | Glu | Glu |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Glu | Glu | Asn | Arg | Leu | Arg | Glu | Glu | Leu | Arg | Gln | Glu | Trp | Glu | Ala | Gln |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Arg | Glu | Lys | Val | Lys | Asp | Glu | Glu | Met | Glu | Val | Thr | Phe | Ser | Tyr | Trp |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Asp | Gly | Ser | Gly | His | Arg | Arg | Thr | Val | Arg | Val | Arg | Lys | Gly | Asn | Thr |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Val | Gln | Gln | Phe | Leu | Lys | Lys | Ala | Leu | Gln | Gly | Leu | Arg | Lys | Asp | Phe |

210 215 220
 Leu Glu Leu Arg Ser Ala Gly Val Glu Gln Leu Met Phe Ile Lys Glu
 225 230 235 240
 Asp Leu Ile Leu Pro His Tyr His Thr Phe Tyr Asp Phe Ile Ile Ala
 245 250 255
 Arg Ala Arg Gly Lys Ser Gly Pro Leu Phe Ser Phe Asp Val His Asp
 260 265 270
 Asp Val Arg Leu Leu Ser Asp Ala Thr Met Glu Lys Asp Glu Ser His
 275 280 285
 Ala Gly Lys Val Val Leu Arg Ser Trp Tyr Glu Lys Asn Lys His Ile
 290 295 300
 Phe Pro Ala Ser Arg Trp Glu Ala Tyr Asp Pro Glu Lys Lys Trp Asp
 305 310 315 320
 Lys Tyr Thr Ile Arg
 325

<210> 4383
 <211> 419
 <212> DNA
 <213> Homo sapiens

<400> 4383
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 60
 aaaatgaaat ataaagcgcc cactgactat tgctttgttt taaagcacc ccaaattcag
 120
 aaggagtccc agtatatcaa gtatctctgc tgtgatgaca caagaaccct taaccagtgg
 180
 gtcattgggaa tacggatagc caagtatggg aagactctct atgataacta ccagcgggct
 240
 gtggcaaagg ctggacttgc ctctcgggtgg acaaacttgg ggacagtcaa tgcagctgca
 300
 ccagctcagc catttacagg acctaaaaca ggcaccaccc agcccaatgg acagattccc
 360
 caggctacac atttcttcag tgctgttctc caagaagccc agagacatgc tgaaaactn
 419

<210> 4384
 <211> 139
 <212> PRT
 <213> Homo sapiens

<400> 4384
 Arg Asp Leu Ala Cys Phe Ile Gln Phe Glu Asn Val Asn Ile Tyr Tyr
 1 5 10 15
 Gly Thr Gln His Lys Met Lys Tyr Lys Ala Pro Thr Asp Tyr Cys Phe
 20 25 30
 Val Leu Lys His Pro Gln Ile Gln Lys Glu Ser Gln Tyr Ile Lys Tyr
 35 40 45
 Leu Cys Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile
 50 55 60
 Arg Ile Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala
 65 70 75 80
 Val Ala Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val


```

<400> 4386
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
 1          5          10          15
Ser Val Pro Ser Gly Gly His Pro Ser Ser His Trp Leu Pro Ala
 20          25          30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
 35          40          45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe

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50 55 60
 Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Leu
 65 70 75 80
 Gln Ala Ala Glu Ser
 85

<210> 4387
 <211> 341
 <212> DNA
 <213> Homo sapiens

<400> 4387
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 60
 gggccccccc aaaagggggg ggggggaagg gggttttccc accccaaaaa accccccccc
 120
 cccccgggn ggggggaag gggggggggg tttttcccc ctccccccc ccctaaaaaa
 180
 aaaaccgga aaattttttt tcccccccc ccaaaaaaa aaaaaaacc ggggggcccc
 240
 ccttttttg gggggggggg tttttttttt tttttttttt tttttttttt ttttttttac
 300
 aaaacagaga atgtttattg tgccagaggg tggagtgtgc n
 341

<210> 4388
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 4388
 Gly Gly Gly Leu Pro Ile Phe Phe Pro Phe Met Gly Gly Gly Phe Phe
 1 5 10 15
 Lys Lys Lys Gly Gly Pro Pro Gln Lys Gly Gly Gly Gly Arg Gly Phe
 20 25 30
 Ser His Pro Lys Lys Pro Pro Pro Pro Gly Xaa Gly Gly Arg Gly
 35 40 45
 Gly Gly Phe Phe Pro Pro Pro Pro Pro Lys Lys Lys Thr Arg Lys
 50 55 60
 Ile Phe Phe Pro Pro Pro Pro Lys Lys Lys Lys Lys Pro Gly Gly Pro
 65 70 75 80
 Pro Phe Phe Gly Gly Gly Gly Phe Phe Phe Phe Phe Phe Phe Phe
 85 90 95
 Phe Phe Phe Tyr Lys Thr Glu Asn Val Tyr Cys Ala Arg Gly Trp Ser
 100 105 110
 Val

<210> 4389
 <211> 1895
 <212> DNA
 <213> Homo sapiens

<400> 4389

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gctgccgagg gccgcgcggt gtacgtggtg gacgacgcag ctgtcctggg cgcagaggac
120
ccagcgggtg acggcgattc tgcccgtgag aaggcattgc gtggagctct gcgagcctcc
180
gtggaacgac gcctgagtcg ccacgacgtc gtcacccctgg actcgcttaa ctacatcaaa
240
ggtttccgtt acgagctcta ctgcctggca cgggcggcgc gcaccccgt ctgcctggtc
300
tactgcgtac ggcccggcgg cccgatcgcg ggacctcagg tggcgggcgc gaacgagaac
360
cctggccgga acgtcagtggt gagttggcgg ccacgcgctg aggaggacgg gagagccag
420
gcggcgggca gcagcgtcct caggggaactg catactgcgg actctgtagt aaatggaagt
480
gcccaggccg acgtacccaa ggaactggag cgagaagaat ccggggctgc ggagtctcca
540
gctcttgatga ctccggattc agagaaatct gcaaagcatg ggtccggtgc cttttactct
600
cccgaactcc tggaggccct aacgctgcgc tttgaggctc ccgattctcg gaatcgctgg
660
gaccggcctt tattcacttt ggtgggcata gaggagccgt tgcccccggc ggggatccgc
720
tctgccctgt ttgagaaccg ggccccacca ccccatcagt ctacgcagtc ccagcccctc
780
gcctccggca gctttctgca ccagttggac caggtcacga gtcaagtact ggccggattg
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900
cacttgcggt ttaccgggcc cttgaccatg gcagaactga gtgccttcg tcgccagttt
960
atttcgtaca ctaaaatgca tcccaacaat gagaacttgc cgcaactggc caacatgttt
1020
cttcagtatt tgagccagag cctgcactaa ccagaggagg taggggggaa gccatggctt
1080
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1140
cgatgcagta ctgtactaga gctgttgatga ctgattcact caaactttcc tgcatacccc
1200
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1260
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1320
gatcctactt gggctatcac agagcattga ccattggctt ccctcatctg aggcgtggga
1380
gagcagactg gatagatgag aattgtttta aaacaattgt gaacagaaac tgaagatggg
1440
acagttctac atctgcacct gccctttttt cataccacaa aagtattttt tgagtactgt
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1560
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1620

aataaaatct tttaaaatag tctactggaa tctctttcac ttaatgttcc ctgtgtaact
 1680
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 1740
 tagttctgag agagtagatg ttttgagcta ctctacagta attatattat gacaatttcc
 1800
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 1860
 tcttcattga tttcattgaa caaatggtag gtacc
 1895

<210> 4390
 <211> 335
 <212> PRT
 <213> Homo sapiens

<400> 4390
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 20 25 30
 Ser Ala Arg Glu Lys Ala Leu Arg Gly Ala Leu Arg Ala Ser Val Glu
 35 40 45
 Arg Arg Leu Ser Arg His Asp Val Val Ile Leu Asp Ser Leu Asn Tyr
 50 55 60
 Ile Lys Gly Phe Arg Tyr Glu Leu Tyr Cys Leu Ala Arg Ala Ala Arg
 65 70 75 80
 Thr Pro Leu Cys Leu Val Tyr Cys Val Arg Pro Gly Gly Pro Ile Ala
 85 90 95
 Gly Pro Gln Val Ala Gly Ala Asn Glu Asn Pro Gly Arg Asn Val Ser
 100 105 110
 Val Ser Trp Arg Pro Arg Ala Glu Glu Asp Gly Arg Ala Gln Ala Ala
 115 120 125
 Gly Ser Ser Val Leu Arg Glu Leu His Thr Ala Asp Ser Val Val Asn
 130 135 140
 Gly Ser Ala Gln Ala Asp Val Pro Lys Glu Leu Glu Arg Glu Glu Ser
 145 150 155 160
 Gly Ala Ala Glu Ser Pro Ala Leu Val Thr Pro Asp Ser Glu Lys Ser
 165 170 175
 Ala Lys His Gly Ser Gly Ala Phe Tyr Ser Pro Glu Leu Leu Glu Ala
 180 185 190
 Leu Thr Leu Arg Phe Glu Ala Pro Asp Ser Arg Asn Arg Trp Asp Arg
 195 200 205
 Pro Leu Phe Thr Leu Val Gly Ile Glu Glu Pro Leu Pro Pro Ala Gly
 210 215 220
 Ile Arg Ser Ala Leu Phe Glu Asn Arg Ala Pro Pro Pro His Gln Ser
 225 230 235 240
 Thr Gln Ser Gln Pro Leu Ala Ser Gly Ser Phe Leu His Gln Leu Asp
 245 250 255
 Gln Val Thr Ser Gln Val Leu Ala Gly Leu Met Glu Ala Gln Lys Ser
 260 265 270
 Ala Val Pro Gly Asp Leu Leu Thr Leu Pro Gly Thr Thr Glu His Leu
 275 280 285
 Arg Phe Thr Arg Pro Leu Thr Met Ala Glu Leu Ser Arg Leu Arg Arg

| | | | | | |
|---|-----|-----|-----|-----|-----|
| 290 | | 295 | | 300 | |
| Gln Phe Ile Ser Tyr Thr Lys Met His Pro Asn Asn Glu Asn Leu Pro | | | | | |
| 305 | | 310 | | 315 | 320 |
| Gln Leu Ala Asn Met Phe Leu Gln Tyr Leu Ser Gln Ser Leu His | | | | | |
| | 325 | | 330 | | 335 |

<210> 4391
 <211> 988
 <212> DNA
 <213> Homo sapiens

<400> 4391
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 120
 ggaggtggca tgcgaccccc acccaactcc ctgcgggcc caggcctgcc tgccatgaac
 180
 atgggcccag gaggctcgtg cccgtgggcc agccccagtg gaaactcgat cccctactcc
 240
 tcctcatccc ccggcagcta caccggaccc ccaggaggag gtggggcccc tggaacaccc
 300
 atcatgccta gccctggaga ttccaccaac tccagcgaaa acatgtacac tatcatgaac
 360
 cccatcgggc agggcgcccg cagggtctaat ttcccgtcgc gccctggccc ggagggcccc
 420
 atggccgcca tgagcgcgat ggagcctcac cacgtgaacg gatccctggg ctcgggcgac
 480
 atggacgggt tgccgaagag ttccccgggc gccgtggccg gcctgagcaa cggccccggc
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 660
 tgcgggccta ggcttctgccc cagcgcccct gctcagggcg aggggctgag gtcacacctc
 720
 gggcacctgg actcctggcc aatcaaggct tgcccagctg ggaggcccca cacgaaagac
 780
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 840
 cctgccattt gtattttgtc ccagagagaa aggtctcttg gggggcccct ctcccagga
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 960
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
 988

<210> 4392
 <211> 211
 <212> PRT
 <213> Homo sapiens

<400> 4392
 Xaa Pro Phe Ser Trp Pro His Gly Ala Ser Pro Arg Ala Gln Gly His

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      1           5           10           15
Pro Ser Met Gly Gly Pro Met Gln Arg Val Thr Pro Pro Arg Gly Met
      20           25           30
Ala Ser Val Gly Pro Gln Ser Tyr Gly Gly Gly Met Arg Pro Pro Pro
      35           40           45
Asn Ser Leu Ala Gly Pro Gly Leu Pro Ala Met Asn Met Gly Pro Gly
      50           55           60
Val Arg Gly Pro Trp Ala Ser Pro Ser Gly Asn Ser Ile Pro Tyr Ser
      65           70           75           80
Ser Ser Ser Pro Gly Ser Tyr Thr Gly Pro Pro Gly Gly Gly Gly Pro
      85           90           95
Pro Gly Thr Pro Ile Met Pro Ser Pro Gly Asp Ser Thr Asn Ser Ser
      100          105          110
Glu Asn Met Tyr Thr Ile Met Asn Pro Ile Gly Gln Gly Ala Gly Arg
      115          120          125
Ala Asn Phe Pro Leu Gly Pro Gly Pro Glu Gly Pro Met Ala Ala Met
      130          135          140
Ser Ala Met Glu Pro His His Val Asn Gly Ser Leu Gly Ser Gly Asp
      145          150          155          160
Met Asp Gly Leu Pro Lys Ser Ser Pro Gly Ala Val Ala Gly Leu Ser
      165          170          175
Asn Ala Pro Gly Thr Pro Arg Asp Gly Glu Met Ala Ala Ala Gly
      180          185          190
Thr Phe Leu His Pro Phe Pro Ser Glu Ser Tyr Ser Pro Gly Met Thr
      195          200          205
Met Ser Val
      210

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<210> 4393

<211> 2171

<212> DNA

<213> Homo sapiens

<400> 4393

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cctttccacc tgggtggtgtt cggcgcgctt ggcttcaccg gccagttcgt gaccgaggag
120
gtggccccggg agcaggtgga cccggagcgg agctcccctg ccctggggcgt ggcgggcccgc
180
tcccgaggaga agctgcagcg ggtgctggag aaggcggccc tgaagctggg aagaccaaca
240
ctgtcatctg aagttggaat catcatctgt gatattgcta atccagcctc gcttgatgaa
300
atggctaaac aggcaacagt tgtcctcaat tgcgtaggac catatcggtt ttatggagaa
360
cctgtaataa aagcatgtat tgaaaatgga gccagttgta tcgacatcag tggagaacct
420
cagtttcttg aactaatgca actgaagtat catgagaaag ctgcagacaa aggggtttat
480
atcattggaa gcagcggcctt tgactccatt ccagcagatc tgggagtaat atataccaga
540
aataaaatga atggtacttt gactgctgtg gaaagtttcc tgactataca ttcaggacct
600

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gaggggttga gcattcatga tggtagctgg aagtcagcaa tttatggttt tggagatcag
660
agtaatttga gaaaactaag aaatgtatca aatctgaaac ctgtcccgt cattgggtcca
720
aaattgaaga gaaggtggcc aatttcttat tgcgggaac tcaaaggta ttccattcct
780
tttatgggat ctgatgtgc tgttgaagg aggactcaac gttacttgta tgaaaattta
840
gaggaatcac cagttcagta tgctgcgtat gtaactgtgg gaggcacac ctctgttatt
900
aagctgatgt ttgcaggact tttctttttg ttcttttgta ggtttggaat tggaggcaa
960
cttctcataa aattcccatg gttcttctcc tttggctatt tttcaaaaca aggccaaca
1020
caaaaacaga ttgatgctgc ctcatcacg ctgacattct ttggtcaagg atacagcca
1080
ggcactggta cagataagaa caaaccaaat atcaaaattt gtactcaggt gaaaggacca
1140
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1380
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1440
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1680
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1800
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1860
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1920
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1980
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2040
ctaagcagaa tttttctcta atttactttt tgtattttta ctaggtttta catggaagcc
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2160
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2171

<210> 4394
 <211> 428
 <212> PRT
 <213> Homo sapiens

<400> 4394

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Met Ala Thr Glu Gln Arg Pro Phe His Leu Val Val Phe Gly Ala Ser
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Gly Phe Thr Gly Gln Phe Val Thr Glu Val Ala Arg Glu Gln Val
 20           25           30
Asp Pro Glu Arg Ser Ser Pro Ala Leu Gly Val Ala Gly Arg Ser Arg
 35           40           45
Glu Lys Leu Gln Arg Val Leu Glu Lys Ala Ala Leu Lys Leu Gly Arg
 50           55           60
Pro Thr Leu Ser Ser Glu Val Gly Ile Ile Ile Cys Asp Ile Ala Asn
 65           70           75           80
Pro Ala Ser Leu Asp Glu Met Ala Lys Gln Ala Thr Val Val Leu Asn
 85           90           95
Cys Val Gly Pro Tyr Arg Phe Tyr Gly Glu Pro Val Ile Lys Ala Cys
 100          105          110
Ile Glu Asn Gly Ala Ser Cys Ile Asp Ile Ser Gly Glu Pro Gln Phe
 115          120          125
Leu Glu Leu Met Gln Leu Lys Tyr His Glu Lys Ala Ala Asp Lys Gly
 130          135          140
Val Tyr Ile Ile Gly Ser Ser Gly Phe Asp Ser Ile Pro Ala Asp Leu
 145          150          155          160
Gly Val Ile Tyr Thr Arg Asn Lys Met Asn Gly Thr Leu Thr Ala Val
 165          170          175
Glu Ser Phe Leu Thr Ile His Ser Gly Pro Glu Gly Leu Ser Ile His
 180          185          190
Asp Gly Thr Trp Lys Ser Ala Ile Tyr Gly Phe Gly Asp Gln Ser Asn
 195          200          205
Leu Arg Lys Leu Arg Asn Val Ser Asn Leu Lys Pro Val Pro Leu Ile
 210          215          220
Gly Pro Lys Leu Lys Arg Arg Trp Pro Ile Ser Tyr Cys Arg Glu Leu
 225          230          235          240
Lys Gly Tyr Ser Ile Pro Phe Met Gly Ser Asp Val Ser Val Val Arg
 245          250          255
Arg Thr Gln Arg Tyr Leu Tyr Glu Asn Leu Glu Glu Ser Pro Val Gln
 260          265          270
Tyr Ala Ala Tyr Val Thr Val Gly Gly Ile Thr Ser Val Ile Lys Leu
 275          280          285
Met Phe Ala Gly Leu Phe Phe Leu Phe Phe Val Arg Phe Gly Ile Gly
 290          295          300
Arg Gln Leu Leu Ile Lys Phe Pro Trp Phe Phe Ser Phe Gly Tyr Phe
 305          310          315          320
Ser Lys Gln Gly Pro Thr Gln Lys Gln Ile Asp Ala Ala Ser Phe Thr
 325          330          335
Leu Thr Phe Phe Gly Gln Gly Tyr Ser Gln Gly Thr Gly Thr Asp Lys
 340          345          350
Asn Lys Pro Asn Ile Lys Ile Cys Thr Gln Val Lys Gly Pro Glu Ala
 355          360          365
Gly Tyr Val Ala Thr Pro Ile Ala Met Val Gln Ala Ala Met Thr Leu

```


| | | | |
|---|-----|-----|-----|
| 370 | 375 | 380 | |
| Leu Ser Asp Ala Ser His Leu Pro Lys Ala Gly Gly Val Phe Thr Pro | | | |
| 385 | 390 | 395 | 400 |
| Gly Ala Ala Phe Ser Lys Thr Lys Leu Ile Asp Arg Leu Asn Lys His | | | |
| | 405 | 410 | 415 |
| Gly Ile Glu Phe Ser Val Ile Ser Ser Ser Glu Val | | | |
| 420 | 425 | | |

<210> 4395

<211> 1893

<212> DNA

<213> Homo sapiens

<400> 4395

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120
ccttctcttc tgcaggcgct gaggatcacg catcctgtga ctctcccctg tccccgccca
180
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240
gaaaacacca tccttatggc caaggaaagg ctggaggccc tgcgcacagc ctttgagtcg
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660
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720
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780
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1140
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1200

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<210> 4396

<211> 463

<212> PRT

<213> Homo sapiens

<400> 4396

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 Ala Gly Lys Ser Ser Leu Ile Asn Ala Leu Arg Gly Leu Glu Ala Glu
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 Ser Pro Tyr Pro His Pro Gln Phe Pro Asp Val Thr Leu Trp Asp Leu
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 Pro Gly Ala Gly Ser Pro Gly Cys Pro Ala Asp Lys Tyr Leu Lys Gln
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 Cys Gly Ala Val Glu Thr Arg Leu Ala Ala Glu Ile Leu Cys Gln Gly
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 Lys Lys Phe Tyr Phe Val Arg Thr Lys Val Asp Glu Asp Leu Ala Ala
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 Thr Arg Thr Gln Arg Pro Ser Gly Phe Arg Glu Ala Ala Val Leu Gln

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 195 200 205
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 Phe Pro Thr Leu Val Ser Thr Trp Glu His Asp Leu Pro Ser His Arg
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 Gln Lys Lys Lys Ala Met Leu Gln Glu Gln Val Leu Lys Thr Ala Leu
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 Val Leu Gly Val Ile Gln Ala Leu Pro Val Pro Gly Leu Ala Ala Ala
 275 280 285
 Tyr Asp Asp Ala Leu Leu Ile His Ser Leu Arg Gly Tyr His Arg Ser
 290 295 300
 Phe Gly Leu Asp Asp Asp Ser Leu Ala Lys Leu Ala Glu Gln Val Gly
 305 310 315 320
 Lys Gln Ala Gly Asp Leu Arg Ser Val Ile Arg Ser Pro Leu Ala Asn
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 Glu Val Ser Pro Glu Thr Val Leu Arg Leu Tyr Ser Gln Ser Ser Asp
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 Gly Ala Met Arg Val Ala Arg Ala Phe Glu Arg Gly Ile Pro Val Phe
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 Gly Thr Leu Val Ala Gly Gly Ile Ser Phe Gly Ala Val Tyr Thr Met
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 Leu Gln Gly Cys Leu Asn Glu Met Ala Glu Asp Ala Gln Arg Val Arg
 385 390 395 400
 Ile Lys Ala Leu Glu Asp Asp Glu Pro Gln Pro Glu Val Ser Leu Glu
 405 410 415
 Val Ala Ser Asp Asn Gly Val Glu Lys Gly Gly Ser Gly Glu Gly Gly
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<210> 4397

<211> 2543

<212> DNA

<213> Homo sapiens

<400> 4397

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<211> 354

<212> PRT

<213> Homo sapiens

<400> 4398

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| Met | Cys | Gly | Arg | Thr | Ser | Cys | His | Leu | Pro | Arg | Asp | Val | Leu | Thr | Arg | 1 | 5 | 10 | 15 |
| Ala | Cys | Ala | Tyr | Gln | Asp | Arg | Arg | Gly | Gln | Gln | Arg | Leu | Pro | Glu | Trp | 20 | 25 | 30 | |
| Arg | Asp | Pro | Asp | Lys | Tyr | Cys | Pro | Ser | Tyr | Asn | Lys | Ser | Pro | Gln | Ser | 35 | 40 | 45 | |
| Asn | Ser | Pro | Val | Leu | Leu | Ser | Arg | Leu | His | Phe | Glu | Lys | Asp | Ala | Asp | 50 | 55 | 60 | |
| Ser | Ser | Glu | Arg | Ile | Ile | Ala | Pro | Met | Arg | Trp | Gly | Leu | Val | Pro | Ser | 65 | 70 | 75 | 80 |
| Trp | Phe | Lys | Glu | Ser | Asp | Pro | Ser | Lys | Leu | Gln | Phe | Asn | Thr | Thr | Asn | 85 | 90 | 95 | |
| Cys | Arg | Ser | Asp | Thr | Val | Met | Glu | Lys | Arg | Ser | Phe | Lys | Val | Pro | Leu | 100 | 105 | 110 | |
| Gly | Lys | Gly | Arg | Arg | Cys | Val | Val | Leu | Ala | Asp | Gly | Phe | Tyr | Glu | Trp | 115 | 120 | 125 | |
| Gln | Arg | Cys | Gln | Gly | Thr | Asn | Gln | Arg | Gln | Pro | Tyr | Phe | Ile | Tyr | Phe | 130 | 135 | 140 | |
| Pro | Gln | Ile | Lys | Thr | Glu | Lys | Ser | Gly | Ser | Ile | Gly | Ala | Ala | Asp | Ser | 145 | 150 | 155 | 160 |
| Pro | Glu | Asn | Trp | Glu | Lys | Val | Trp | Asp | Asn | Trp | Arg | Leu | Leu | Thr | Met | 165 | 170 | 175 | |
| Ala | Gly | Ile | Phe | Asp | Cys | Trp | Glu | Pro | Pro | Glu | Gly | Gly | Asp | Val | Leu | 180 | 185 | 190 | |
| Tyr | Ser | Tyr | Thr | Ile | Ile | Thr | Val | Asp | Ser | Cys | Lys | Gly | Leu | Ser | Asp | 195 | 200 | 205 | |
| Ile | His | His | Arg | Met | Pro | Ala | Ile | Leu | Asp | Gly | Glu | Glu | Ala | Val | Ser | | | | |

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Lys Trp Leu Asp Phe Gly Glu Val Ser Thr Gln Glu Ala Leu Lys Leu
225      230      235      240
Ile His Pro Thr Glu Asn Ile Thr Phe His Ala Val Ser Ser Val Val
      245      250      255
Asn Asn Ser Arg Asn Asn Thr Pro Glu Cys Leu Ala Pro Val Asp Leu
      260      265      270
Val Val Lys Lys Glu Leu Arg Ala Ser Gly Ser Ser Gln Arg Met Leu
      275      280      285
Gln Trp Leu Ala Thr Lys Ser Pro Lys Lys Glu Asp Ser Lys Thr Pro
      290      295      300
Gln Lys Glu Glu Ser Asp Val Pro Gln Trp Ser Ser Gln Phe Leu Gln
305      310      315      320
Lys Ser Pro Leu Pro Thr Lys Arg Gly Thr Ala Gly Leu Leu Glu Gln
      325      330      335
Trp Leu Lys Arg Glu Lys Glu Glu Glu Pro Val Ala Lys Arg Pro Tyr
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Ser Gln

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 <211> 723
 <212> DNA
 <213> Homo sapiens

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 600
 gagatcgagt tcctgaggct gcagggtgctg gagcagcagc acgtcattga cgacctctca
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 723

<210> 4400

<211> 241
 <212> PRT
 <213> Homo sapiens

<400> 4400

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      20           25           30
Leu Gly Val Gln Ala Gly Gln Thr Gln Lys Leu Leu Leu Gln Lys Glu
      35           40           45
Ala Leu Asp Glu Gln Leu Val Gln Val Lys Glu Ala Glu Arg His His
      50           55           60
Ser Ser Pro Lys Arg Glu Leu Pro Pro Gly Ile Gly Asp Met Val Glu
      65           70           75           80
Leu Met Gly Val Gln Asp Gln His Met Asp Glu Arg Asp Val Arg Arg
      85           90           95
Phe Gln Leu Lys Ile Ala Glu Leu Asn Ser Val Ile Arg Lys Leu Glu
      100          105          110
Asp Arg Asn Thr Leu Leu Ala Asp Glu Arg Asn Glu Leu Leu Lys Arg
      115          120          125
Ser Arg Glu Thr Glu Val Gln Leu Lys Pro Leu Val Glu Lys Asn Lys
      130          135          140
Arg Met Asn Lys Lys Asn Glu Asp Leu Leu Gln Ser Ile Gln Arg Met
      145          150          155          160
Glu Glu Lys Ile Lys Asn Leu Thr Arg Glu Asn Val Glu Met Lys Glu
      165          170          175
Lys Leu Ser Ala Gln Ala Ser Leu Lys Arg His Thr Ser Leu Asn Asp
      180          185          190
Leu Ser Leu Thr Arg Asp Glu Gln Glu Ile Glu Phe Leu Arg Leu Gln
      195          200          205
Val Leu Glu Gln Gln His Val Ile Asp Asp Leu Ser Leu Glu Arg Glu
      210          215          220
Arg Leu Leu Arg Ser Lys Arg His Arg Gly Lys Ser Leu Lys Pro Pro
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<210> 4401
 <211> 1131
 <212> DNA
 <213> Homo sapiens

<400> 4401

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240
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300

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 420
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 480
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 720
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 780
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<211> 252

<212> PRT

<213> Homo sapiens

<400> 4402

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| Met | Ala | Ala | Val | Asp | Ser | Phe | Tyr | Leu | Leu | Tyr | Arg | Glu | Ile | Ala | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Cys | Asn | Cys | Tyr | Met | Glu | Ala | Leu | Ala | Leu | Val | Gly | Ala | Trp | Tyr |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Thr | Ala | Arg | Lys | Ser | Ile | Thr | Val | Ile | Cys | Asp | Phe | Tyr | Ser | Leu | Ile |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Arg | Leu | His | Phe | Ile | Pro | Arg | Leu | Gly | Ser | Arg | Ala | Asp | Leu | Ile | Lys |
| | | 50 | | | | 55 | | | | 60 | | | | | |
| Gln | Tyr | Gly | Arg | Trp | Ala | Val | Val | Ser | Gly | Ala | Thr | Asp | Gly | Ile | Gly |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Lys | Ala | Tyr | Ala | Glu | Glu | Leu | Ala | Ser | Arg | Gly | Leu | Asn | Ile | Ile | Leu |
| | | | | 85 | | | | 90 | | | | | 95 | | |
| Ile | Ser | Arg | Asn | Glu | Glu | Lys | Leu | Gln | Val | Val | Ala | Lys | Asp | Ile | Ala |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asp | Thr | Tyr | Lys | Val | Glu | Thr | Asp | Ile | Ile | Val | Ala | Asp | Phe | Ser | Ser |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Arg | Glu | Ile | Tyr | Leu | Pro | Ile | Arg | Glu | Ala | Leu | Lys | Asp | Lys | Asp |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Val | Gly | Ile | Leu | Val | Asn | Asn | Val | Gly | Val | Phe | Tyr | Pro | Tyr | Pro | Gln |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 | | 150 | | 155 | | 160 | | | | | | | | | |
| Tyr | Phe | Thr | Gln | Leu | Ser | Glu | Asp | Lys | Leu | Trp | Asp | Ile | Ile | Asn | Val |
| | | 165 | | 170 | | 175 | | | | | | | | | |
| Asn | Ile | Ala | Ala | Ala | Ser | Leu | Met | Val | His | Val | Val | Leu | Pro | Gly | Met |
| | | 180 | | 185 | | 190 | | | | | | | | | |
| Val | Glu | Arg | Lys | Lys | Gly | Ala | Ile | Val | Thr | Ile | Ser | Ser | Gly | Leu | Leu |
| | | 195 | | 200 | | 205 | | | | | | | | | |
| Leu | Gln | Pro | Thr | Pro | Gln | Leu | Ala | Ala | Phe | Ser | Ala | Ser | Lys | Ala | Tyr |
| | | 210 | | 215 | | 220 | | | | | | | | | |
| Leu | Asp | His | Phe | Ser | Arg | Ala | Leu | Gln | Tyr | Glu | Tyr | Ala | Ser | Lys | Gly |
| | | 225 | | 230 | | 235 | | | | | | | | | 240 |
| Ile | Phe | Val | Gln | Ser | Leu | Xaa | Pro | Phe | Tyr | Val | Ala | | | | |
| | | 245 | | 250 | | | | | | | | | | | |

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 1020

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<210> 4404
 <211> 779
 <212> PRT
 <213> Homo sapiens

<400> 4404

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 Gly Met Met Pro Asn Gly Gln Asp Met Ser Thr Met Glu Ser Gly Pro
 35 40 45
 Asn Asn His Gly Asn Phe Gln Gly Asp Ser Asn Phe Asn Arg Met Trp
 50 55 60
 Gln Pro Glu Trp Gly Met His Gln Gln Pro Pro His Pro Pro Pro Asp
 65 70 75 80
 Gln Pro Trp Met Pro Thr Pro Gly Pro Met Asp Ile Val Pro Pro
 85 90 95
 Ser Glu Asp Ser Asn Ser Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn
 100 105 110
 Arg His Ile Phe Asn Gln Asn Asn His Asn Phe Gly Gly Pro Pro Asp
 115 120 125
 Asn Phe Ala Val Gly Pro Val Asn Gln Phe Asp Tyr Gln His Gly Ala
 130 135 140
 Ala Phe Gly Pro Pro Gln Gly Gly Phe His Pro Pro Tyr Trp Gln Pro
 145 150 155 160
 Gly Pro Pro Gly Pro Pro Ala Pro Pro Gln Asn Arg Arg Glu Arg Pro
 165 170 175
 Ser Ser Phe Arg Asp Arg Gln Arg Ser Pro Ile Ala Leu Pro Val Lys
 180 185 190
 Gln Glu Pro Pro Gln Ile Asp Ala Val Lys Arg Arg Thr Leu Pro Ala
 195 200 205
 Trp Ile Arg Glu Gly Leu Glu Lys Met Glu Arg Glu Lys Gln Lys Lys
 210 215 220
 Leu Glu Lys Glu Arg Met Glu Gln Gln Arg Ser Gln Leu Ser Lys Lys
 225 230 235 240
 Lys Lys Lys Ala Thr Glu Asp Ala Glu Gly Gly Asp Gly Pro Arg Leu
 245 250 255
 Pro Gln Arg Ser Lys Phe Asp Ser Asp Glu Glu Glu Glu Asp Thr Glu
 260 265 270
 Asn Val Glu Ala Ala Ser Ser Gly Lys Val Thr Arg Ser Pro Ser Pro
 275 280 285
 Val Pro Gln Glu Glu His Ser Asp Pro Glu Met Thr Glu Glu Glu Lys
 290 295 300
 Glu Tyr Gln Met Met Leu Leu Thr Lys Met Leu Leu Thr Glu Ile Leu
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 Leu Asp Val Thr Asp Glu Glu Ile Tyr Tyr Val Ala Lys Asp Ala His
 325 330 335
 Arg Lys Ala Thr Lys Ala Pro Ala Lys Gln Leu Ala Gln Ser Ser Ala
 340 345 350
 Leu Ala Ser Leu Thr Gly Leu Gly Leu Gly Gly Tyr Gly Ser Gly
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 Asp Ser Glu Asp Glu Arg Ser Asp Arg Gly Ser Glu Ser Ser Asp Thr

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 Asp Asp Glu Glu Leu Arg His Arg Ile Arg Gln Lys Gln Glu Ala Phe
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 Trp Arg Lys Glu Lys Glu Gln Gln Leu Leu His Asp Lys Gln Met Glu
 405 410 415
 Glu Glu Lys Gln Gln Thr Glu Arg Val Thr Lys Glu Met Asn Glu Phe
 420 425 430
 Ile His Lys Glu Gln Asn Ser Leu Ser Leu Leu Glu Ala Arg Glu Ala
 435 440 445
 Asp Gly Asp Val Val Asn Glu Lys Lys Arg Thr Pro Asn Glu Thr Thr
 450 455 460
 Ser Val Leu Glu Pro Lys Lys Glu His Lys Glu Lys Glu Lys Gln Gly
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 Arg Ser Arg Ser Gly Ser Ser Ser Ser Gly Ser Ser Ser Ser Asn Ser
 485 490 495
 Arg Thr Ser Ser Thr Ser Ser Thr Val Ser Ser Ser Ser Tyr Ser Ser
 500 505 510
 Ser Ser Gly Ser Ser Arg Thr Ser Ser Arg Ser Ser Ser Pro Lys Arg
 515 520 525
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 Ser Arg Ser Arg Ser Tyr Ser Arg Arg Ile Lys Ile Glu Ser Asn Arg
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 Ala Arg Val Lys Ile Arg Asp Arg Arg Arg Ser Asn Arg Asn Ser Ile
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 580 585 590
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 595 600 605
 Arg Ser Arg Asp Arg Arg Lys Ile Asp Asp Gln Arg Gly Asn Leu Ser
 610 615 620
 Gly Asn Ser His Lys His Lys Gly Glu Ala Lys Glu Gln Glu Arg Lys
 625 630 635 640
 Lys Glu Arg Ser Arg Ser Ile Asp Lys Asp Arg Lys Lys Lys Asp Lys
 645 650 655
 Glu Arg Glu Arg Glu Gln Asp Lys Arg Lys Glu Lys Gln Lys Arg Glu
 660 665 670
 Glu Lys Asp Phe Lys Phe Ser Ser Gln Asp Asp Arg Leu Lys Arg Lys
 675 680 685
 Arg Glu Ser Glu Arg Thr Phe Ser Arg Ser Gly Ser Ile Ser Val Lys
 690 695 700
 Ile Ile Arg His Asp Ser Arg Gln Asp Ser Lys Lys Ser Thr Thr Lys
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 Asp Ser Lys Lys His Ser Gly Ser Asp Ser Ser Gly Arg Ser Ser Ser
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<210> 4405

<211> 918

<212> DNA

<213> Homo sapiens

<400> 4405

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<210> 4406

<211> 138

<212> PRT

<213> Homo sapiens

<400> 4406

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 Lys Glu Leu Tyr Asp His Ala Glu Ala Thr Ile Val Val Met Leu Val
 35 40 45
 Gly Asn Lys Ser Asp Leu Ser Gln Ala Arg Glu Val Pro Thr Glu Glu
 50 55 60
 Ala Arg Met Phe Ala Glu Asn Asn Gly Leu Leu Phe Leu Glu Thr Ser
 65 70 75 80
 Ala Leu Asp Ser Thr Asn Val Glu Leu Ala Phe Glu Thr Val Leu Lys

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 85 | | 90 | | 95 | | | | | | | | | | |
| Glu | Ile | Phe | Ala | Lys | Val | Ser | Lys | Gln | Arg | Gln | Asn | Ser | Ile | Arg | Thr |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asn | Ala | Ile | Thr | Leu | Gly | Ser | Ala | Gln | Ala | Gly | Gln | Glu | Pro | Gly | Pro |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gly | Glu | Lys | Arg | Ala | Cys | Cys | Ile | Ser | Leu | | | | | | |
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<210> 4407

<211> 974

<212> DNA

<213> Homo sapiens

<400> 4407

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<211> 158

<212> PRT

<213> Homo sapiens

<400> 4408

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 35 40 45
 Glu Ser Leu His Leu Phe Asn Ser Ile Cys Asn His Lys Tyr Phe Ser
 50 55 60
 Thr Thr Ser Ile Val Leu Phe Leu Asn Lys Lys Asp Ile Phe Gln Glu
 65 70 75 80
 Lys Val Thr Lys Val His Leu Ser Ile Cys Phe Pro Glu Tyr Thr Gly
 85 90 95
 Pro Asn Thr Phe Glu Asp Ala Gly Asn Tyr Ile Lys Asn Gln Phe Leu
 100 105 110
 Asp Leu Asn Leu Lys Lys Glu Asp Lys Glu Ile Tyr Ser His Met Thr
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<210> 4409

<211> 4217

<212> DNA

<213> Homo sapiens

<400> 4409

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<210> 4410

<211> 405

<212> PRT

<213> Homo sapiens

<400> 4410

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| Glu | Ser | Ser | Glu | Glu | Glu | Glu | Gly | Glu | Glu | Gly | Glu | Ala | Gly | Gly | Lys | 1 | 5 | 10 | 15 |
| Gln | Gly | Pro | Arg | Gly | Ser | Arg | Ser | Ser | Arg | Ala | Asp | Pro | Pro | Pro | His | 20 | 25 | 30 | |
| Ser | His | Met | Ala | Thr | Arg | Ser | Arg | Glu | Asn | Ala | Arg | Arg | Arg | Gly | Thr | 35 | 40 | 45 | |
| Pro | Glu | Pro | Glu | Glu | Ala | Gly | Arg | Arg | Gly | Gly | Lys | Arg | Pro | Lys | Pro | 50 | 55 | 60 | |
| Pro | Pro | Gly | Val | Ala | Ser | Ala | Ser | Ala | Arg | Gly | Pro | Pro | Ala | Thr | Asp | 65 | 70 | 75 | 80 |
| Gly | Leu | Gly | Ala | Lys | Val | Lys | Leu | Glu | Glu | Lys | Gln | His | His | Pro | Cys | 85 | 90 | 95 | |
| Gln | Lys | Cys | Pro | Arg | Val | Phe | Asn | Asn | Arg | Trp | Tyr | Leu | Glu | Lys | His | 100 | 105 | 110 | |
| Met | Asn | Val | Thr | His | Ser | Arg | Met | Gln | Ile | Cys | Asp | Gln | Cys | Gly | Lys | 115 | 120 | 125 | |
| Arg | Phe | Leu | Leu | Glu | Ser | Glu | Leu | Leu | Leu | His | Arg | Gln | Thr | Asp | Cys | 130 | 135 | 140 | |
| Glu | Arg | Asn | Ile | Gln | Cys | Val | Thr | Cys | Gly | Lys | Ala | Phe | Lys | Lys | Leu | 145 | 150 | 155 | 160 |
| Trp | Ser | Leu | His | Glu | His | Asn | Lys | Ile | Val | His | Gly | Tyr | Ala | Glu | Lys | 165 | 170 | 175 | |
| Lys | Phe | Ser | Cys | Glu | Ile | Cys | Glu | Lys | Lys | Phe | Tyr | Thr | Met | Ala | His | 180 | 185 | 190 | |
| Val | Arg | Lys | His | Met | Val | Ala | His | Thr | Lys | Asp | Met | Pro | Phe | Thr | Cys | 195 | 200 | 205 | |
| Glu | Thr | Cys | Gly | Lys | Ser | Phe | Lys | Arg | Ser | Met | Ser | Leu | Lys | Val | His | 210 | 215 | 220 | |
| Ser | Leu | Gln | His | Ser | Gly | Glu | Lys | Pro | Phe | Arg | Cys | Glu | Asn | Cys | Asp | 225 | 230 | 235 | 240 |
| Glu | Arg | Phe | Gln | Tyr | Lys | Tyr | Gln | Leu | Arg | Ser | His | Met | Ser | Ile | His | 245 | 250 | 255 | |
| Ile | Gly | His | Lys | Gln | Phe | Met | Cys | Gln | Trp | Cys | Gly | Lys | Asp | Phe | Asn | 260 | 265 | 270 | |
| Met | Lys | Gln | Tyr | Phe | Asp | Glu | His | Met | Lys | Thr | His | Thr | Gly | Glu | Lys | 275 | 280 | 285 | |
| Pro | Phe | Ile | Cys | Glu | Ile | Cys | Gly | Lys | Ser | Phe | Thr | Ser | Arg | Pro | Asn | 290 | 295 | 300 | |
| Met | Lys | Arg | His | Arg | Arg | Thr | His | Thr | Gly | Glu | Lys | Pro | Tyr | Pro | Cys | | | | |

```

<400> 4412
Met Val Gln Gly Gln Leu Tyr Ala Ser Pro Gln Met Leu Leu Ser Ser
 1          5          10          15
Leu Ser Ile Lys Glu Glu Gly Pro Arg Leu Gly Leu Gly Leu Gly
      20          25          30
Ala Gln Ala Val Cys Pro Leu Phe Ser Ser Trp Cys Pro Ala Pro Pro
      35          40          45
Arg Cys His Leu Pro Gln Trp Gln Trp Gly Phe Ile Thr Gly Ser Ser
      50          55          60
Gly Pro Leu Pro Met Ala Gly Gly Val Pro Gly Gly Pro Asn Gln Ala

```

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Ala | Pro | Ala | Ser | Arg | Gln | Arg | Val | Gly | Phe | Leu | Gly | Gln | Pro | Gln | Ser |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Cys | Gln | Arg | Gln | His | Val | Ser | Leu | His | Arg | Ser | His | Gln | Ala | Pro | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |

Asp

<210> 4413
 <211> 1097
 <212> DNA
 <213> Homo sapiens

<400> 4413
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 60
 gttgcctcca cagagcgcca gagaggcgtc agtttcaaac tggagaaaa aaccgcccac
 120
 agcagcctgg cactcttcag agatgatacg ggtgtcaa atggccttggg gggattggag
 180
 cccaccaagg tgccttgaat gtggagcgct tccgggagtt ggcagggtgct ggcagacaca
 240
 gcggtcacca gtggcagaca ctactgggaa gtgacagtga agcgctccca gcagttccgg
 300
 ataggagtgg cagatgtgga catgtcccgg gatagctgca ttggtgttga tgatcgttcc
 360
 tgggtgttca cctatgccca gcgcaagtgg tacaccatgt tggccaacga gaaagcccca
 420
 gttgagggta ttgggcagcc agagaagggtg gggctgttgc tggagtatga ggcccagaag
 480
 ctgagcctgg tggatgtgag ccaggctctt gtggttcaca cgctacagac agatttccgg
 540
 ggtccagtgg tgcctgcctt tgctctctgg gatggggagc tgctgaccca ttcaggggctt
 600
 gaggtgcccg agggcctcta gtatgtccat tactggagtc cctaatacag cctttggcca
 660
 gcctcctttt gaaagtgtcc gaagcctttt tactttgcct caagcaacct ctagctccca
 720
 caattcagtg ttgggtcctc tgtgcaatat catgatcatc ttctcatcc cctaccttgt
 780
 gaaagctagg catacagcca aaccctcctt tccccaccc accaactact gccaatctcc
 840
 taggctacca tgggtgtatc ttccttgacc tgcttccttc agtccctctg cctccctttg
 900
 cccaggcctt tctcagactg tattccatcc tggggcttta tcattcagct ttgtttgaat
 960
 ttattaatca ccatgatacc tctccctccc tttgtccaca tgtaacttgt tcttgggggt
 1020
 ctaccagatg gctgaagagt aaatcctttc tacctctggc tgaaaaaaaa aaaaaaaaaa
 1080
 aaaaaaaaaa aaaaaaa
 1097

<210> 4414

<211> 65
<212> PRT
<213> Homo sapiens

<400> 4414
Met Ala Leu Leu Phe Ala Arg Ser Leu Arg Leu Cys Arg Trp Gly Ala
1 5 10 15
Lys Arg Leu Gly Val Ala Ser Thr Glu Arg Gln Arg Gly Val Ser Phe
20 25 30
Lys Leu Glu Glu Lys Thr Ala His Ser Ser Leu Ala Leu Phe Arg Asp
35 40 45
Asp Thr Gly Val Lys Tyr Gly Leu Val Gly Leu Glu Pro Thr Lys Val
50 55 60
Pro
65

<210> 4415
<211> 775
<212> DNA
<213> Homo sapiens

<400> 4415
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60
tccagcagaa agagacaaag atctttgttc aaaatattct gaaaaaggta aactaactgc
120
attattgaat acacaaaagg aatgttaccg ttacttgttc atagtcaaag gtgaagttaa
180
aaaaaaaggg aagttaaata actgaagtaa tggtttgccc aaatagcaaa cgtaggatac
240
aggcgtgggc aaagagcagc tactgaagct catgaggagg atgctggata tagggtaggt
300
aacttgacaa atgcctctgc ttctttggaa ccttcttcct agatcacccc cacaaattcc
360
aaacctggct ctttcagagc acaacagcca aatgtaacta aactcctcat tacttctgtg
420
atatttggca acagaatgag atagtttaaa aaaaaatcaa tttcttgttg agacaagaca
480
tgtctgaatc catttctctt ggggtaggag gaggtaatga acattaacgt tctgcatctc
540
aatctcctaa aatggaattt aaccagatag atatcgcttg agattttaaa gcaggagata
600
ccataagtaa tgatactcca ggcctgtaaa gcatttttca ttgtcccaca ttgcagctaa
660
atgagtataa actcgacagt gttctgattt cacaacatat gcatttatga caactgctaa
720
aacaacttta caggctcaaa cgatagggtc caagggattt ttgtttttgc ttaag
775

<210> 4416
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4416

```

Met Lys Asn Ala Leu Gln Ala Trp Ser Ile Ile Thr Tyr Gly Ile Ser
 1             5             10             15
Cys Phe Lys Ile Ser Ser Asp Ile Tyr Leu Val Lys Phe His Phe Arg
      20             25             30
Arg Leu Arg Cys Arg Thr Leu Met Phe Ile Thr Ser Ser Tyr Pro Lys
      35             40             45
Arg Asn Gly Phe Arg His Val Leu Ser Gln Gln Glu Ile Asp Phe Phe
      50             55             60
Leu Asn Tyr Leu Ile Leu Leu Pro Asn Ile Thr Glu Val Met Arg Ser
      65             70             75             80
Leu Val Thr Phe Gly Cys Cys Ala Leu Lys Glu Pro Gly Leu Glu Phe
      85             90             95
Val Gly Val Ile
      100

```

<210> 4417

<211> 980

<212> DNA

<213> Homo sapiens

<400> 4417

```

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60
aaaatgaagg tggaatcgtc ccaagaagcc aatgctgagg tgatgcgaga gatgaccaag
120
aagctgtaca gccagtatga ggagaagctg caggaagaac agaggaagca cagtgttgag
180
aaggaggctc ttttggaaga aaccaatagt tttctgaaag cgattgaaga agccaataaa
240
aagatgcaag cagcagagat cagcctagag gagaaagacc agaggatcgg ggagctggac
300
aggctgattg agcgcattga aaaggaacgt catcaactgc aacttcaact cctagaacat
360
gaaacagaaa tgtctgggga gttaactgat tctgacaagg aaaggtatca gcagttggag
420
gaggcatcag ccagcctccg tgagcggatc agacacctag atgacatggt gcattgccag
480
cagaagaaag tcaagcagat ggttgaggag attgagtcac taaagaaaaa agtgcaacag
540
aagcagctcc tgatactgca gcttttagaa aaaatctctt tcttgggaagg agagaataat
600
gaactacaaa gcaggttgga ctatttgaca gaaaccagg ccaagactga agtggaacaa
660
agagaaattg gagtgggctg tgatcttctt ccagcccaa caggcaggac tcgtgaaatt
720
gtgatgcctt ctaggaacta caccacatac acaagagtcc tggagttatc ctcaaagaaa
780
acgctgactt aggcactcag aggcatacac tttttacaga tggacaaaag ctctggaacc
840
ctgtggcttc aaatcctttg ggaaggggtga ctgttgtttc ccctacacac agtgtaagcc
900
ggaatgggaa tcgctgaggc tctgatccac ttctaagaca ggaaggaaa tgaaggcaga
960

```

gtgagcaggt aagagagga
980

<210> 4418
<211> 263
<212> PRT
<213> Homo sapiens

<400> 4418
Xaa Arg Val Arg Glu Lys Gln Arg Gln Leu Glu Val Ala Gln Val Glu
1 5 10 15
Asn Gln Leu Leu Lys Met Lys Val Glu Ser Ser Gln Glu Ala Asn Ala
20 25 30
Glu Val Met Arg Glu Met Thr Lys Lys Leu Tyr Ser Gln Tyr Glu Glu
35 40 45
Lys Leu Gln Glu Glu Gln Arg Lys His Ser Ala Glu Lys Glu Ala Leu
50 55 60
Leu Glu Glu Thr Asn Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys
65 70 75 80
Lys Met Gln Ala Ala Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile
85 90 95
Gly Glu Leu Asp Arg Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln
100 105 110
Leu Gln Leu Gln Leu Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu
115 120 125
Thr Asp Ser Asp Lys Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala
130 135 140
Ser Leu Arg Glu Arg Ile Arg His Leu Asp Asp Met Val His Cys Gln
145 150 155 160
Gln Lys Lys Val Lys Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys
165 170 175
Lys Val Gln Gln Lys Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile
180 185 190
Ser Phe Leu Glu Gly Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr
195 200 205
Leu Thr Glu Thr Gln Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly
210 215 220
Val Gly Cys Asp Leu Leu Pro Ser Pro Thr Gly Arg Thr Arg Glu Ile
225 230 235 240
Val Met Pro Ser Arg Asn Tyr Thr Pro Tyr Thr Arg Val Leu Glu Leu
245 250 255
Ser Ser Lys Lys Thr Leu Thr
260

<210> 4419
<211> 369
<212> DNA
<213> Homo sapiens

<400> 4419
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60
cagggtcttg ctctgntcac ccaggctgga gtgcagtggt gcgatcttgg ctactgcaa
120

cctccgcctc cccagctcaa gcaactctcc tgccccagcc acccaagtnn aaattacagg
 180
 cccgtgccac cacacccggc caatttctgt atttttagta gagacggggg ttcaccatat
 240
 tggccaggac ggtctcaaac tcctggcccc atgtgatect cccaccttgg cctcccaagg
 300
 tgctggtatt acaggcgtga gccaccactg cgcttggcca gattttgctc ttttttgagc
 360
 agtctcagn
 369

<210> 4420

<211> 91

<212> PRT

<213> Homo sapiens

<400> 4420

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ile | Pro | Cys | Ile | Glu | Ser | Ala | Arg | Ile | His | Thr | Ile | Tyr | Tyr | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Ile | Leu | Arg | Gln | Gly | Leu | Ala | Leu | Xaa | Thr | Gln | Ala | Gly | Val | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Trp | Cys | Asp | Leu | Gly | Ser | Leu | Gln | Pro | Pro | Pro | Pro | Gln | Leu | Lys | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Ser | Cys | Pro | Ser | His | Pro | Ser | Xaa | Asn | Tyr | Arg | Pro | Val | Pro | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| His | Pro | Ala | Asn | Phe | Cys | Ile | Phe | Ser | Arg | Asp | Gly | Val | Ser | Pro | Tyr |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Trp | Pro | Gly | Arg | Ser | Gln | Thr | Pro | Gly | Pro | Met | | | | | |
| | | | 85 | | | | | | 90 | | | | | | |

<210> 4421

<211> 1356

<212> DNA

<213> Homo sapiens

<400> 4421

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 tgtggacacc aaatcccgca ggggttgctg tagctatgcc cgtgggcatc cttgccctgg
 120
 ctgggggtgtg ctagagagag gaaagctgga ggaggagagc tgagctgggtg gttaccccat
 180
 gccaggaggg ccaaggcaag aagcctgcag cccagagat actgaccctg tcccctgccc
 240
 tccagggcac aactgaacta acggaatggc ttaatcagat agctcgagaa ctgccactac
 300
 cactccctcc ctgcccactc ctcccaaagt ccacctgttc ccgcaagagt cccacctcac
 360
 aagcaaccac cagaggctga tacaaatggc cgctgtatgt ttgctaaagt gacagtgaca
 420
 cagataaggc aaagagctga ggggcaggac acatcagatg ggaaggggga gaccgtgcaa
 480
 aatggcagtc taacagaaaa tcctccttgt accaacagcc ccttccctcc caagttaggt
 540

gagcccttgg gccagtgtat gggcagaaaa gcagatttgt gtccttcaga agggaaatgt
 600
 aaaaagggtga aagctctagt tgaagggcag tgagaggggc tggagtggga gagaagggtct
 660
 ctcttgcccg gtggtctggg tgcagcaagg gcactctgag aaggcagaat ggaaacgcag
 720
 ggctggaggg gcatgggtac aggtttgggg gctctttcca gcctctacta tgttgcccc
 780
 ttccccaag cccttacagg ggcagaagca cattccccgt gacctgagt ctggcctcat
 840
 ttgggaagtc ttctggggtg tatggatgcc tgtgtgtgtg agtgagatgg gtggggggcc
 900
 acggctatct ggctctagca cactcatggg agaccagctc tgggaacaac aggatggggg
 960
 gctgggatgg gggtttaaga ggtctctgct agatatttct gaactgacct cccaggtgc
 1020
 ccaacctggc cttgggaaga gaggcctag ggcagcgggg atggaaacct ttgcctgcag
 1080
 cataggtcca ggcctcatgg ccctacacct tgacctctg actttgttgc cctggcctta
 1140
 agtacaaga ttctcactg cgtgctaaga aaacagatcc cgggccgggc ccggttgctc
 1200
 acacctataa tcccagcact ttggaaggct gaggcgggtg aatcacctga gatcaggagt
 1260
 tcgagaccag cctggccaac atggcaaac cctgtctcta ctaaaaacac aaaaatttgc
 1320
 cgggcatggg ggcagatgcc tgtaatccca gctact
 1356

<210> 4422
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 4422
 Gly Arg Ala Arg Leu Leu Thr Pro Ile Ile Pro Ala Leu Trp Lys Ala
 1 5 10 15
 Glu Ala Gly Glu Ser Pro Glu Ile Arg Ser Ser Arg Pro Ala Trp Pro
 20 25 30
 Thr Trp Gln Asn Pro Val Ser Thr Lys Asn Thr Lys Ile Cys Arg Ala
 35 40 45
 Trp Trp Gln Met Pro Val Ile Pro Ala Thr
 50 55

<210> 4423
 <211> 2673
 <212> DNA
 <213> Homo sapiens

<400> 4423
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 gaggatgacg aggtgccggg ggagcccag tctgactccg gggacgagga agaggagggg
 120

cccattgtgc tgggcagacg acaaaaagct ttggggaaga accgcagtgc tgatttcaac
180
cctgatttcg ttttactga gaaggagggg acgtacgatg gcagctgggc cctggctgat
240
gtcatgagcc aactcaagaa gaagagggca gccactacat tagatgagaa gattgagaaa
300
gttcgaaaga aaaggaaaac agaggataaa gaagccaagt ctgggaagtt ggaaaaggag
360
aaagaagcaa aggaaggctc tgaaccaagg gagcaggaag accttcaaga gaatgatgag
420
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480
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540
gcaggaggat tttttgaaga tgcattctcag tacgatgaaa acctctcgtt ccaggacatg
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660
atccagaagg cgtgcatacc tgtgggtcta ttggggaagg acatctgtgc ctgtgcagcc
720
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780
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840
caggtgcact ctgtcaccag acagctggcc cagttctgca acatcaccac ctgcctggct
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960
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1020
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1140
accatgacag acgaggtgaa agatctggct tctgtctcct tgaagaatcc tgtccgata
1200
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1260
cctaatactg aaggagaccg ggaagccatc gtggcagctt tgttgacgag gaccttact
1320
gaccatgtga tgctgttcac gcaaaccaag aagcaggccc accgcatgca catcctcctg
1380
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1440
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1560
atcaaacatt atgtccaccg ggtggggcga acagcacgtg ctggcagggc tgggcgctca
1620
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1680
gcccctgtga aggccaggat acttcccaa gatgtcatcc tcaaattccg ggacaagatt
1740

gagaaaatgg agaaagatgt gtatgcagtt ctgcagctag aggcggagga aaaagagatg
 1800
 cagcagtcag aagcccagat caatacagca aagcggctcc tggagaaggg gaaggaggca
 1860
 gtggtccaag agcccagag gagctggttc cagaccaaag aagagaggaa gaaggagaaa
 1920
 attgccaag ctctgcagga atttgacttg gccttaagag gaaagaagaa aaggaagaag
 1980
 tttatgaagg atgccaaaaa aaagggggag atgacagcag aggaaaggtc tcagtttgaa
 2040
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 2100
 gcccagacaa tgcccagga ggagccagt agaggtcctg ccaagaagca aaagcagggg
 2160
 aagaaatctg tatttgatga agaactcacc aacacaagca agaaggccct gaaacagtat
 2220
 cgagctggcc ctctcttga agaaaggaaa cagttgggct tgccccacca gagacgagga
 2280
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 2340
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 2400
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 2460
 gggcagccct taaatccctt cctgtggga agtcacctg gctggtctgt cttttctcca
 2520
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 2580
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 2640
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 2673

<210> 4424

<211> 768

<212> PRT

<213> Homo sapiens

<400> 4424

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ser | Gly | Phe | Cys | Asp | Asn | Met | Leu | Ala | Asp | Leu | Gly | Leu | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Thr | Ile | Gly | Glu | Asp | Asp | Glu | Val | Pro | Val | Glu | Pro | Glu | Ser | Asp |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ser | Gly | Asp | Glu | Glu | Glu | Glu | Gly | Pro | Ile | Val | Leu | Gly | Arg | Arg | Gln |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Ala | Leu | Gly | Lys | Asn | Arg | Ser | Ala | Asp | Phe | Asn | Pro | Asp | Phe | Val |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Phe | Thr | Glu | Lys | Glu | Gly | Thr | Tyr | Asp | Gly | Ser | Trp | Ala | Leu | Ala | Asp |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Val | Met | Ser | Gln | Leu | Lys | Lys | Lys | Arg | Ala | Ala | Thr | Thr | Leu | Asp | Glu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Lys | Ile | Glu | Lys | Val | Arg | Lys | Lys | Arg | Lys | Thr | Glu | Asp | Lys | Glu | Ala |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Lys | Ser | Gly | Lys | Leu | Glu | Lys | Glu | Lys | Glu | Ala | Lys | Glu | Gly | Ser | Glu |

| | | |
|---|-----|-----|
| 115 | 120 | 125 |
| Pro Arg Glu Gln Glu Asp Leu Gln Glu Asn Asp Glu Glu Gly Ser Glu | | |
| 130 | 135 | 140 |
| Asp Glu Ala Ser Glu Thr Asp Tyr Ser Ser Ala Asp Glu Asn Ile Leu | | |
| 145 | 150 | 155 |
| Thr Lys Ala Asp Thr Leu Lys Val Lys Asp Arg Lys Lys Lys Lys Lys | | |
| 165 | 170 | 175 |
| Lys Gly Gln Glu Ala Gly Gly Phe Phe Glu Asp Ala Ser Gln Tyr Asp | | |
| 180 | 185 | 190 |
| Glu Asn Leu Ser Phe Gln Asp Met Asn Leu Ser Arg Pro Leu Leu Lys | | |
| 195 | 200 | 205 |
| Ala Ile Thr Ala Met Gly Phe Lys Gln Pro Thr Pro Ile Gln Lys Ala | | |
| 210 | 215 | 220 |
| Cys Ile Pro Val Gly Leu Leu Gly Lys Asp Ile Cys Ala Cys Ala Ala | | |
| 225 | 230 | 235 |
| Thr Gly Thr Gly Lys Thr Ala Ala Phe Ala Leu Pro Val Leu Glu Arg | | |
| 245 | 250 | 255 |
| Leu Ile Tyr Lys Pro Arg Gln Ala Pro Val Thr Arg Val Leu Val Leu | | |
| 260 | 265 | 270 |
| Val Pro Thr Arg Glu Leu Gly Ile Gln Val His Ser Val Thr Arg Gln | | |
| 275 | 280 | 285 |
| Leu Ala Gln Phe Cys Asn Ile Thr Thr Cys Leu Ala Val Gly Gly Leu | | |
| 290 | 295 | 300 |
| Asp Val Lys Ser Gln Glu Ala Ala Leu Arg Ala Ala Pro Asp Ile Leu | | |
| 305 | 310 | 315 |
| Ile Ala Thr Pro Gly Arg Leu Ile Asp His Leu His Asn Cys Pro Ser | | |
| 325 | 330 | 335 |
| Phe His Leu Ser Ser Ile Glu Val Leu Ile Leu Asp Glu Ala Asp Arg | | |
| 340 | 345 | 350 |
| Met Leu Asp Glu Tyr Phe Glu Glu Gln Met Lys Glu Ile Ile Arg Met | | |
| 355 | 360 | 365 |
| Cys Ser His His Arg Gln Thr Met Leu Phe Ser Ala Thr Met Thr Asp | | |
| 370 | 375 | 380 |
| Glu Val Lys Asp Leu Ala Ser Val Ser Leu Lys Asn Pro Val Arg Ile | | |
| 385 | 390 | 395 |
| Phe Val Asn Ser Asn Thr Asp Val Ala Pro Phe Leu Arg Gln Glu Phe | | |
| 405 | 410 | 415 |
| Ile Arg Ile Arg Pro Asn Arg Glu Gly Asp Arg Glu Ala Ile Val Ala | | |
| 420 | 425 | 430 |
| Ala Leu Leu Thr Arg Thr Phe Thr Asp His Val Met Leu Phe Thr Gln | | |
| 435 | 440 | 445 |
| Thr Lys Lys Gln Ala His Arg Met His Ile Leu Leu Gly Leu Met Gly | | |
| 450 | 455 | 460 |
| Leu Gln Val Gly Glu Leu His Gly Asn Leu Ser Gln Thr Gln Arg Leu | | |
| 465 | 470 | 475 |
| Glu Ala Leu Arg Arg Phe Lys Asp Glu Gln Ile Asp Ile Leu Val Ala | | |
| 485 | 490 | 495 |
| Thr Asp Val Ala Ala Arg Gly Leu Asp Ile Glu Gly Val Lys Thr Val | | |
| 500 | 505 | 510 |
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 Val Ala Val Val Arg Ile Asn Ser Pro Asn Ser Lys Val Asn Thr Leu
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 Ser Lys Glu Leu His Ser Glu Phe Ser Glu Val Met Asn Glu Ile Trp
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 Ala Ser Asp Gln Ile Arg Ser Ala Val Leu Ile Ser Ser Lys Pro Gly
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 Cys Phe Ile Ala Gly Ala Asp Ile Asn Met Leu Ala Ala Cys Lys Thr
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 Lys Leu Glu Lys Ser Thr Lys Pro Ile Val Ala Ala Ile Asn Gly Ser
 130 135 140
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 Ala Thr Lys Asp Arg Lys Thr Val Leu Gly Thr Pro Glu Val Leu Leu

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 Gly Val Pro Ala Ala Leu Asp Met Met Leu Thr Gly Arg Ser Ile Arg
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 325 330 335
 Lys Ala Leu Met Gly Leu Tyr His Gly Gln Val Leu Cys Lys Lys Asn
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 Lys Phe Gly Ala Pro Gln Lys Asp Val Lys His Leu Ala Ile Leu Gly
 355 360 365
 Ala Gly Leu Met Gly Ala Gly Ile Ala Gln Val Ser Val Asp Lys Gly
 370 375 380
 Leu Lys Thr Ile Leu Lys Asp Ala Thr Leu Thr Ala Leu Asp Arg Gly
 385 390 395 400
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 Leu Thr Ser Phe Glu Arg Asp Ser Ile Phe Ser Asn Leu Thr Gly Gln
 420 425 430
 Leu Asp Tyr Gln Gly Phe Glu Lys Ala Asp Met Val Ile Glu Ala Val
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 Ile Ser Glu Ile Ala Ala Val Ser Lys Arg Pro Glu Lys Val Ile Gly
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 Met His Tyr Phe Ser Pro Val Asp Lys Met Gln Leu Leu Glu Ile Ile
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 Thr Thr Glu Lys Thr Ser Lys Asp Thr Ser Ala Ser Ala Val Ala Val
 515 520 525
 Gly Leu Lys Gln Gly Lys Val Ile Ile Val Val Lys Asp Gly Pro Gly
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 Phe Tyr Thr Thr Arg Cys Leu Ala Pro Met Met Ser Glu Val Ile Arg
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 Ile Leu Gln Glu Gly Val Asp Pro Lys Lys Leu Asp Ser Leu Thr Thr
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<210> 4430

<211> 151

<212> PRT

<213> Homo sapiens

<400> 4430

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| Met | Glu | Val | Pro | Arg | Leu | Thr | Cys | Ser | Gln | Pro | Asp | Thr | Thr | Ser | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Arg | Arg | Val | Met | Pro | Ile | Asn | Gly | Thr | Pro | Ile | Gly | Arg | Leu | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Ala | Leu | Pro | Gln | Val | Asn | Thr | Arg | Arg | Glu | Ser | Leu | Asn | Arg | Gln |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Ala | Pro | Gln | Pro | Arg | Arg | Lys | Pro | Ser | Phe | Gln | Thr | Val | Gly | Ile | Pro |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Phe | Ile | Pro | Trp | His | Arg | Glu | Pro | Lys | Gly | Met | Gln | Thr | Asp | Pro | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Arg | Ala | Leu | His | Ser | Gln | Thr | Leu | Ala | Arg | Thr | Arg | Arg | Leu | Gly | Ala |
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| Pro | Arg | Arg | Ala | Leu | Pro | Pro | Arg | Pro | Pro | Pro | Pro | Ala | Asp | Ser | Pro |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Cys | Glu | Leu | Asn | His | Leu | Gly | Ala | Met | Cys | Arg | Gly | Arg | Ala | Ser |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Ala | Ser | Glu | Val | Leu | Gly | Gly | Pro | Val | Thr | Ala | Ser | Arg | Phe | Tyr | Gly |
| | | 130 | | | | 135 | | | | | | 140 | | | |
| Xaa | Pro | Pro | Pro | Val | Ser | Trp | | | | | | | | | |
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<210> 4431

<211> 507

<212> DNA

<213> Homo sapiens

<400> 4431

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cccggttgccc atccctgcgg ggctgcagcc atccctctcc acagcaagga tgacgtggaa
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 <211> 57
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Leu Cys Phe Leu Ser Asp Pro Ile Arg
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<210> 4433
 <211> 447
 <212> DNA
 <213> Homo sapiens

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<210> 4434
 <211> 149
 <212> PRT
 <213> Homo sapiens

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 Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln
 35 40 45
 Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser
 50 55 60
 Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
 65 70 75 80
 Arg Glu His Glu Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
 85 90 95
 Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
 100 105 110
 Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
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 Pro Pro Gly Leu Phe Ala Asn Ala Arg Asn Ile Thr Thr Leu Asp Met
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 Ser His Asn Gln Ile
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<210> 4435

<211> 783

<212> DNA

<213> Homo sapiens

<400> 4435

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 cta
 783

<210> 4436

<211> 261
 <212> PRT
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<400> 4436

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 Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp
 35 40 45
 Leu Arg Tyr His Leu Gln Gln Asn Val His Phe Thr Glu Gly Thr Val
 50 55 60
 Lys Leu Tyr Ile Cys Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg
 65 70 75 80
 Tyr His Ile Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp
 85 90 95
 Glu His Gly His Val His Ile Thr Asp Phe Asn Ile Ala Thr Val Val
 100 105 110
 Lys Gly Ala Glu Arg Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met
 115 120 125
 Ala Pro Glu Val Phe Gln Val Tyr Met Asp Arg Gly Pro Gly Tyr Ser
 130 135 140
 Tyr Pro Val Asp Trp Trp Ser Leu Gly Ile Thr Ala Tyr Glu Leu Leu
 145 150 155 160
 Arg Gly Trp Arg Pro Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu
 165 170 175
 Ile Leu Asn Met Phe Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp
 180 185 190
 Cys Lys Gly Met Val Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro
 195 200 205
 Glu Ser Arg Val Ser Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu
 210 215 220
 Ala Asp Met Asn Trp Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly
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 Phe Val Pro Asn Lys Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu
 245 250 255
 Glu Glu Met Ile Leu
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<210> 4437
 <211> 620
 <212> DNA
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<400> 4437

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<210> 4438
 <211> 206
 <212> PRT
 <213> Homo sapiens

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 Val Val Glu Leu Cys Gln Tyr Arg Val Ser Met Leu Lys Met Asp Glu
 35 40 45
 Ser Thr Leu Leu Arg Glu Ala Gln Glu Leu Ser Leu Glu Lys Leu Gln
 50 55 60
 Gln Ala Val Arg Gln Asn Gly Leu Met Ser Gly Leu Met Gln Met Leu
 65 70 75 80
 Leu Leu Lys Val Ser Ala His Ile Thr Glu Gln Leu Gly Met Ala Pro
 85 90 95
 Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
 100 105 110
 Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
 115 120 125
 Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
 130 135 140
 Leu Cys Phe Leu Ser Asp Pro Ile Ser Lys Asp Asp Val Glu Arg Cys
 145 150 155 160
 Lys Gln Lys Asp Leu Leu Glu Gln Met Met Ala Glu Met Ile Gly Glu
 165 170 175
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<210> 4439
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 <212> DNA
 <213> Homo sapiens

<400> 4439

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<212> PRT

<213> Homo sapiens

<400> 4440

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| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Leu | Arg | Phe | Ala | Phe | Ile | Asp | Val | Gly | Ile | Phe | Arg | Asn | Ser | Ala | Pro |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Arg | Leu | Ser | Met | Ile | Gly | Ala | Asp | Ser | Ser | Glu | Glu | Lys | Phe | Leu | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Arg | Ile | Gly | Arg | Phe | Gly | Tyr | Gly | Tyr | Gly | Pro | Tyr | Gln | Pro | Val | Pro |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Glu | Gln | Pro | Leu | Tyr | Pro | Gln | Pro | Tyr | Gln | Pro | Gln | Tyr | Gln | Gln | Tyr |
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<210> 4441

<211> 2055

<212> DNA

<213> Homo sapiens

<400> 4441

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1740
tgcacatcag cttaaagctg atgcaacagt cctctctcta cgcaccaat gagaccatgc
1800
tgacctctt ctacgaagac agcaaactgt accaggtgcc cgggtggagct atgccccgac
1860
atcggggcac ccagggagg ctgacccag ctcacctggc cctgccttcc ccctgcagct
1920

gggtgtacctt atgaacaacc agaagggcca gctgggtcaag aggctcgtgc ccgtggagca
 1980
 gcttctgatg tatcaacagc acaccagcca ctatgacttg gagcggaag ggtgagaaga
 2040
 caccggacca tgaca
 2055

<210> 4442
 <211> 517
 <212> PRT
 <213> Homo sapiens

<400> 4442
 Met Gly Arg Lys Ser Lys Lys Trp Gly Lys Lys Val Ser Arg Tyr Glu
 1 5 10 15
 Gly Lys Val Arg Leu Lys Lys Val Pro Ala Lys Lys Leu Val Pro Ala
 20 25 30
 Trp Lys Glu Lys Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser
 35 40 45
 Trp Arg Leu Trp Ala Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val
 50 55 60
 Val Leu Asn Glu Phe Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser
 65 70 75 80
 Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met
 85 90 95
 Leu Val Asp Ser Pro Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro
 100 105 110
 Tyr Tyr Leu Lys Ile Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp
 115 120 125
 Leu Val Arg Met Gly His Leu Thr Gly Leu Lys Pro Leu Val Leu Val
 130 135 140
 Thr Phe Gln Ser Pro Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu
 145 150 155 160
 Gln Ile Gln Met Glu Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly
 165 170 175
 Gly Gly Gly Arg Asp Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe
 180 185 190
 Leu Lys Arg Asp Arg Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu
 195 200 205
 Leu Phe Asn Leu Met Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro
 210 215 220
 Leu Trp His Thr Val Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile
 225 230 235 240
 Pro Asn Glu Lys Tyr Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe
 245 250 255
 Ser Leu Val Glu Val Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser
 260 265 270
 Cys Trp Val Gly Ser Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr
 275 280 285
 Ile Tyr Asp Thr Ile Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn
 290 295 300
 Gln Leu Val Tyr Tyr Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg
 305 310 315 320
 Asn Arg Gly Ser Gly Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu

325 330 335
 Gly Thr Leu Val Asn Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu
 340 345 350
 Ala Ser Glu Cys Ile Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn
 355 360 365
 Gly Ser Glu Tyr Ile Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr
 370 375 380
 Val His Phe Gly Thr Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser
 385 390 395 400
 Glu Tyr Ile Ala Gly Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly
 405 410 415
 Tyr Gly Asn Ala Ser Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala
 420 425 430
 Ser Asp Asp Leu Glu Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu
 435 440 445
 Ala Arg Gly Leu Glu Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr
 450 455 460
 Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn
 465 470 475 480
 Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln Arg Ser Gly Thr Ser
 485 490 495
 Trp Arg Ala Ala Thr Gly Ser Thr Ser Cys Ser Leu Pro Arg Ala Gly
 500 505 510
 Arg Cys Thr Ser Ala
 515

<210> 4443

<211> 692

<212> DNA

<213> Homo sapiens

<400> 4443

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 ccagggttaag gtctggggccc ctgctgctga catccccac atgtcagtct gcctgctagt
 120
 gggattgact aactcatcaa cgtggagttt aatgcccaac caagtgcaga ccacgctcct
 180
 gttttgcgtc accctctgcg aagcttctctg caaacttgac tccctgcca gtgccccag
 240
 ccccaaggct ggtctccagg aggttaaggcc cgccctgcag gcaacaccgg tgcttgggct
 300
 cctgctgagc agttctttcc tgcgagtaac agaaccaggg agggagggtg gctgtggcct
 360
 ccctgcccc tacagtcatc tctgcagct cccaccatgc tggactcatc agcagcagag
 420
 caagtgaccc gactgacgct gaagctcttg ggacagaagc tggagcaaga acggcagaac
 480
 gtggaagggg gacctgaggg ctccacctcg agccaggaaa tgaggaccgg ccggacgatg
 540
 ccctgcagac tgctctgaag agaaggaggg accttctgca gagactccgg gaacaacacc
 600
 tcttgacga gctctctcgg gccaggcct ggagcggggc aagcagagga gcctcagat
 660

cagccctgcc cccagagctg cccccacgc gt
692

<210> 4444

<211> 108

<212> PRT

<213> Homo sapiens

<400> 4444

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Val | Cys | Leu | Leu | Val | Gly | Leu | Thr | Asn | Ser | Ser | Thr | Trp | Ser |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Leu | Met | Pro | Asn | Gln | Val | Gln | Thr | Thr | Leu | Leu | Phe | Cys | Val | Thr | Leu |
| | | | 20 | | | | 25 | | | | | | 30 | | |
| Cys | Glu | Ala | Ser | Cys | Lys | Leu | Asp | Ser | Leu | Pro | Ser | Ala | Pro | Ser | Pro |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Lys | Ala | Gly | Leu | Gln | Glu | Val | Arg | Pro | Ala | Leu | Gln | Ala | Thr | Pro | Val |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Leu | Gly | Leu | Leu | Leu | Ser | Ser | Ser | Phe | Leu | Arg | Val | Thr | Glu | Pro | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Arg | Glu | Val | Gly | Cys | Gly | Leu | Pro | Cys | Pro | Tyr | Ser | His | Leu | Leu | Gln |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Pro | Pro | Cys | Trp | Thr | His | Gln | Gln | Gln | Ser | Lys | | | | |
| | | | 100 | | | | | 105 | | | | | | | |

<210> 4445

<211> 901

<212> DNA

<213> Homo sapiens

<400> 4445

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cagccaaggc ccaatgccac tgaagatgga cctgccccct ggggaccag gagtcctacc
120
actcagctgt cccagaggat gccagaccc tcattcttat ccaggaccta ggagccctac
180
ccctggcctt ccctcatcag ccgtaaatga tgatttactg ctgttaccat catcactgcc
240
ttcagtgacc aagggccttc caaggtgcca gctctggaac gaaggatgcc cttgggaggt
300
gatgatactc aggtacacgg gtgctcaaca gattgcttcc tcctatcttc agacggtctt
360
tgcattcatg cagccattgg cactcccatt gtgtggaagg aaaccagccc agggtcacac
420
agctggtcag cagcaacata gctggtctca aatctaaggc gcctgacct gcctccatga
480
gggaccgcct ccaaggagg ttgatcctgg ctttggggag cctttcctgg gctgcacgaa
540
taacctccat tgttcgagac cccaaactct gtcacatct tcctttcct gtctctgctt
600
gggctatgat caggtgact ctagcaaccc ttcattggaca ttataatact ctctgccatt
660
cacttttggc ctaatctgac ttcaaccccc acttacttgg tctctccttt tacaaccaac
720

atggcaaaac cccatctcca caaaaattgg ataatttgat aattatcatt attgggtttc
 780
 tgagacgtta cacatttaac attctcttct gcacaagttg cctttgtgtg agtatactaa
 840
 ctttctgtag aggtatactt gtaatcacaataagaataa attatataaa acaaaaaaaaa
 900
 a
 901

<210> 4446
 <211> 140
 <212> PRT
 <213> Homo sapiens

<400> 4446
 Met Leu Gln Trp Ile Thr Gln His Pro Ser Gln Gly Pro Met Pro Leu
 1 5 10 15
 Lys Met Asp Leu Pro Pro Gly Asp Pro Gly Val Leu Pro Leu Ser Cys
 20 25 30
 Pro Gln Glu Cys Pro Asp Pro His Ser Tyr Pro Gly Pro Arg Ser Pro
 35 40 45
 Thr Pro Gly Leu Pro Ser Ser Ala Val Asn Asp Asp Leu Leu Leu Leu
 50 55 60
 Pro Ser Ser Leu Pro Ser Val Thr Lys Gly Leu Pro Arg Cys Gln Leu
 65 70 75 80
 Trp Asn Glu Gly Cys Pro Trp Glu Val Met Ile Leu Arg Tyr Thr Gly
 85 90 95
 Ala Gln Gln Ile Ala Ser Ser Tyr Pro Gln Thr Val Phe Ala Cys Met
 100 105 110
 Gln Pro Leu Ala Leu Pro Leu Cys Gly Arg Lys Pro Ala Gln Gly His
 115 120 125
 Thr Ala Gly Gln Gln Gln His Ser Trp Ser Gln Ile
 130 135 140

<210> 4447
 <211> 951
 <212> DNA
 <213> Homo sapiens

<400> 4447
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 agccaggccc cagacaccgc actcagggcc atggccgaca ggggcccgtg gaggggtggg
 120
 gtgggtgggt atggccgcct cggacagtcc cttgtgtccc gccttctggc tcagggatca
 180
 gaactgggccc tagaacttgt ttttgtgtgg aaccgtgacc ctggacgaat ggcagggagt
 240
 gtgccccctg ccctgcagct cgaagacctc actacacttg aggaaaggca ccctgacctt
 300
 gtggtagaag tggcccatcc aaaaataatc catgaatctg gggtagaaat cctccgtcat
 360
 gcaaaccctc tgagccttcg tgtcaccatg gccacacacc ccgatggctt ccggcttgag
 420

ggacccttgg ctgcagccca cagccctggg ccttgactg tgctctacga aggccctgtc
 480
 cgtgggctct gcccctttgc cccgcgaaat tccaacacca tggcggcggc tgcctggct
 540
 gccccagcc tgggcttcga tggggtgatt ggggtgctcg tggctgatac cagcctcacg
 600
 gacatgcacg tgggtgatgt agagctgagc ggaccccggg gcccacggg ccgaagcttt
 660
 gctgtgcaca cccgcagaga gaaccctgcc gagccaggcg cggtcaccgg ctccgccacc
 720
 gtcacggcct tctggcgag cctcctggcc tgctgccagc tcccctccag gccggggatc
 780
 catctctgct gagaagcctc ctccctcccg agacaagatc atctgcctgg cctctcacca
 840
 ccaccatccc acccctgcc tgcccactt cccaggggc tcccttctga ctcagtaaag
 900
 atcaccgtg cctccccccg caaaaaaaaa aaaaaaaaaa aaaaaaaaaa a
 951

<210> 4448

<211> 263

<212> PRT

<213> Homo sapiens

<400> 4448

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Pro | Lys | Ser | Gly | Cys | Pro | Gly | Leu | Val | Gln | Arg | Ala | Ala |
| 1 | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Ser | Pro | Gly | Ser | Gln | Ala | Pro | Asp | Thr | Ala | Leu | Arg | Ala | Met |
| | | 20 | | | | | 25 | | | | | 30 | | Ala |
| Asp | Arg | Gly | Pro | Trp | Arg | Val | Gly | Val | Val | Gly | Tyr | Gly | Arg | Leu |
| | 35 | | | | | 40 | | | | | 45 | | | Gly |
| Gln | Ser | Leu | Val | Ser | Arg | Leu | Leu | Ala | Gln | Gly | Ser | Glu | Leu | Gly |
| | 50 | | | | | 55 | | | | | 60 | | | Leu |
| Glu | Leu | Val | Phe | Val | Trp | Asn | Arg | Asp | Pro | Gly | Arg | Met | Ala | Gly |
| 65 | | | | 70 | | | | | 75 | | | | 80 | Ser |
| Val | Pro | Pro | Ala | Leu | Gln | Leu | Glu | Asp | Leu | Thr | Thr | Leu | Glu | Arg |
| | | | 85 | | | | | 90 | | | | | 95 | |
| His | Pro | Asp | Leu | Val | Val | Glu | Val | Ala | His | Pro | Lys | Ile | Ile | His |
| | | 100 | | | | | | 105 | | | | 110 | | Glu |
| Ser | Gly | Val | Gln | Ile | Leu | Arg | His | Ala | Asn | Leu | Leu | Ser | Leu | Arg |
| | 115 | | | | | 120 | | | | | 125 | | | Val |
| Thr | Met | Ala | Thr | His | Pro | Asp | Gly | Phe | Arg | Leu | Glu | Gly | Pro | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | Ala |
| Ala | Ala | His | Ser | Pro | Gly | Pro | Cys | Thr | Val | Leu | Tyr | Glu | Gly | Pro |
| 145 | | | | 150 | | | | | | 155 | | | | 160 |
| Arg | Gly | Leu | Cys | Pro | Phe | Ala | Pro | Arg | Asn | Ser | Asn | Thr | Met | Ala |
| | | | 165 | | | | | 170 | | | | | 175 | Ala |
| Ala | Ala | Leu | Ala | Ala | Pro | Ser | Leu | Gly | Phe | Asp | Gly | Val | Ile | Gly |
| | | 180 | | | | | | 185 | | | | 190 | | Val |
| Leu | Val | Ala | Asp | Thr | Ser | Leu | Thr | Asp | Met | His | Val | Val | Asp | Val |
| | 195 | | | | | 200 | | | | | 205 | | | Glu |
| Leu | Ser | Gly | Pro | Arg | Gly | Pro | Thr | Gly | Arg | Ser | Phe | Ala | Val | His |
| | 210 | | | | 215 | | | | | | 220 | | | Thr |
| Arg | Arg | Glu | Asn | Pro | Ala | Glu | Pro | Gly | Ala | Val | Thr | Gly | Ser | Ala |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 | | 230 | | 235 | | 240 | | | | | | | | | |
| Val | Thr | Ala | Phe | Trp | Arg | Ser | Leu | Leu | Ala | Cys | Cys | Gln | Leu | Pro | Ser |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Arg | Pro | Gly | Ile | His | Leu | Cys | | | | | | | | | |
| | | | 260 | | | | | | | | | | | | |

<210> 4449
 <211> 1365
 <212> DNA
 <213> Homo sapiens

<400> 4449
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 ttctcgatgg aggacaaaac ctccaactgt agaagttcta gaaagtatag ataaggaaat
 120
 tcaagcattg gaagaattta gggaaaaaaaa tcagagatta caaaaattat gggttggaag
 180
 attaattctg tattcctcag ttctctatct gtttacatgc ttaattgtat atttgtggta
 240
 ttttctgat gaatttacag caagacttgc catgacactc ccattttttg cttttccatt
 300
 gatcatctgg agcataagaa cagtaattat tttcttcttt tccaagagaa cagaaagaaa
 360
 taatgaagca ttggatgatt taaaatccca gaggaaaaaa atacttgaag aagtcatgga
 420
 aaaagaaact tacaagacgg ctaaattaat tcttgaaagg tttgatccgt actcaaagaa
 480
 agcaaaggag tgtgagccgc catctgctgg agcagctgta actgcaagac ctggacaaga
 540
 gattcgtcag cgaactgcag ctcaaagaaa cctttctcaa caccagcaag ccctaaccag
 600
 ggccctctc cacaagttcc agtatctcct ggaccaccaa aggacagttc tgcccttgg
 660
 ggacccccag aaaggactgt tactccagcc ctatcatcaa atgtgttacc aagacatctt
 720
 ggatccccctg ctacttcagt gcctggaatg ggtcttcac ctcagggtcc acctttagca
 780
 agacctattc tcccccgaga acgaggtgct ttggatagaa ttgttgaata tttggttgg
 840
 gatggtccac aaaacaggta tgcacttata tgcagcagt gtttttctca taatggcatg
 900
 gctttgaagg aagaatttga atacattgct tttcgatgtg cctactgttt tttcttgaac
 960
 cctgcaagaa aaaccagacc tcaggctcca agacttctg agtttagttt tgagaagagg
 1020
 caggtggtgg aaggttcaag ttcagttggt cccttgccat caggaagtgt gctttcatca
 1080
 gacaaccagt ttaatgaaga atcttttagaa cacgatgttc ttgatgataa tacagagcag
 1140
 acagatgaca aaataccagc tacagaacag acaaaccaag tgattgaaaa agcatctgac
 1200
 tcagaggaac cagaggagaa acaagagact gagaatgagg aagcctcagt gattgaaacc
 1260

aactccacag ttcttgagc tgattctatt cctgatcctg aactaagtgg agaattcttg
 1320
 acggcagagt agtaaagtct tccacgtgcc ttcaactgga aaaaa
 1365

<210> 4450

<211> 194

<212> PRT

<213> Homo sapiens

<400> 4450

Met Gly Leu His Pro Pro Gly Pro Pro Leu Ala Arg Pro Ile Leu Pro
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 Arg Glu Arg Gly Ala Leu Asp Arg Ile Val Glu Tyr Leu Val Gly Asp
 20 25 30
 Gly Pro Gln Asn Arg Tyr Ala Leu Ile Cys Gln Gln Cys Phe Ser His
 35 40 45
 Asn Gly Met Ala Leu Lys Glu Glu Phe Glu Tyr Ile Ala Phe Arg Cys
 50 55 60
 Ala Tyr Cys Phe Phe Leu Asn Pro Ala Arg Lys Thr Arg Pro Gln Ala
 65 70 75 80
 Pro Arg Leu Pro Glu Phe Ser Phe Glu Lys Arg Gln Val Val Glu Gly
 85 90 95
 Ser Ser Ser Val Gly Pro Leu Pro Ser Gly Ser Val Leu Ser Ser Asp
 100 105 110
 Asn Gln Phe Asn Glu Glu Ser Leu Glu His Asp Val Leu Asp Asp Asn
 115 120 125
 Thr Glu Gln Thr Asp Asp Lys Ile Pro Ala Thr Glu Gln Thr Asn Gln
 130 135 140
 Val Ile Glu Lys Ala Ser Asp Ser Glu Glu Pro Glu Glu Lys Gln Glu
 145 150 155 160
 Thr Glu Asn Glu Glu Ala Ser Val Ile Glu Thr Asn Ser Thr Val Pro
 165 170 175
 Gly Ala Asp Ser Ile Pro Asp Pro Glu Leu Ser Gly Glu Ser Leu Thr
 180 185 190
 Ala Glu

<210> 4451

<211> 1637

<212> DNA

<213> Homo sapiens

<400> 4451

nntcctggag gacccaggac tgaccaagtc cccggcctca gcaggcgatc atgttggcag
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 120
 gaggccttcc ctgcccagtc cccacaggac ctcacctagg gtggaggaga gcaacagcaa
 180
 gctcctggag tcagagagga agctgcagga ggagcgacac cgcaccgtgg tcttggagca
 240
 acatctggag aagatacgcc tggagccagg gaaggcatca gcctcccaga gacgagctcc
 300

caggacaaaa acagctccgc tcctggatgt atgctgtgta cggggccttg gctgtgatgg
360
gcacaatggg cccttggtac ctgctgctgc tgcttggtca ctgtgtgggc ctctatgtgg
420
cctcgctttt gggccagccc tggctctgtc ttggccttgg cttggccagc ctggcctcct
480
tcaagatgga cccctaatac tcttggcaga gcgggtttgt aacaggcact tttgatcttc
540
aagaggtgct gtttcatggg ggcagcagct tcacagtgtc gcgttgacc agctttgcac
600
tggagagctg tgcccaccct gaccgccact nactccttag ctgacctgt caagtacaac
660
ttctacctgc cttcttctt cttcgggccc atcatgacct ttgatcgctt ccattgctcag
720
gtgagccagg tggagccagt gagacgcgag ggtgagctgt ggcacatccg agcccaggca
780
ggcctaagcg tggtagccat catggccgtc gacatcttct ttcacttctt ctacatcctc
840
actatccca gcgacctcaa gttagccaac cgctcccag acagtgcct cgctggccta
900
gcctattcaa acctggtgta tgactgggtg aaggcgccg tcctcttttg tgttgtaaac
960
actgtggcat gcctcgacca cctggacca cccagcctc ccaagtgcac caccgcactc
1020
tacgtctttg cgaaacgca ctttgacctg ggcataacg actggctttg caaatatgtg
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acatttgcca tcaccacact gtggcttggg ctttgtgaca ttgtctacct gtggtcattc
1200
cttaactgct ttggcctcaa ctttgagctc tggatgcaaa aactggcaga gtgggggccc
1260
ctagcaagaa ttgaggctc tctgtcagtg cagatgtccc gtaggggccg ggccctgtt
1320
ggagccatga acttctgggc catcatcatg tacaaccttg tgagcctgaa cagcctcaaa
1380
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1440
atcctgtttg tcacctactg tggcgccag ctggtaaagg agcgtgagcg aaccttggca
1500
ctggaggagg agcagaagca ggacaaagag aagccggagt aggagggagc gggtagagg
1560
atgggctctg ctgagctatt cttgggccag atggggcctg accgatagaa taaaagactt
1620
ttctacaaca aaaaaa
1637

<210> 4452

<211> 328

<212> PRT

<213> Homo sapiens

<400> 4452

Met Gly Ala Ala Ala Ser Gln Cys Cys Val Ala Pro Ala Leu His Trp

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 Arg Ala Val Pro Thr Leu Thr Ala Thr Xaa Ser Leu Ala Asp Leu Leu
 20 25 30
 Lys Tyr Asn Phe Tyr Leu Pro Phe Phe Phe Phe Gly Pro Ile Met Thr
 35 40 45
 Phe Asp Arg Phe His Ala Gln Val Ser Gln Val Glu Pro Val Arg Arg
 50 55 60
 Glu Gly Glu Leu Trp His Ile Arg Ala Gln Ala Gly Leu Ser Val Val
 65 70 75 80
 Ala Ile Met Ala Val Asp Ile Phe Phe His Phe Phe Tyr Ile Leu Thr
 85 90 95
 Ile Pro Ser Asp Leu Lys Phe Ala Asn Arg Leu Pro Asp Ser Ala Leu
 100 105 110
 Ala Gly Leu Ala Tyr Ser Asn Leu Val Tyr Asp Trp Val Lys Ala Ala
 115 120 125
 Val Leu Phe Gly Val Val Asn Thr Val Ala Cys Leu Asp His Leu Asp
 130 135 140
 Pro Pro Gln Pro Pro Lys Cys Ile Thr Ala Leu Tyr Val Phe Ala Glu
 145 150 155 160
 Thr His Phe Asp Arg Gly Ile Asn Asp Trp Leu Cys Lys Tyr Val Tyr
 165 170 175
 Asn His Ile Gly Gly Glu His Ser Ala Val Ile Pro Glu Leu Ala Ala
 180 185 190
 Thr Val Ala Thr Phe Ala Ile Thr Thr Leu Trp Leu Gly Pro Cys Asp
 195 200 205
 Ile Val Tyr Leu Trp Ser Phe Leu Asn Cys Phe Gly Leu Asn Phe Glu
 210 215 220
 Leu Trp Met Gln Lys Leu Ala Glu Trp Gly Pro Leu Ala Arg Ile Glu
 225 230 235 240
 Ala Ser Leu Ser Val Gln Met Ser Arg Arg Val Arg Ala Leu Phe Gly
 245 250 255
 Ala Met Asn Phe Trp Ala Ile Ile Met Tyr Asn Leu Val Ser Leu Asn
 260 265 270
 Ser Leu Lys Phe Thr Glu Leu Val Ala Arg Arg Leu Leu Leu Thr Gly
 275 280 285
 Phe Pro Gln Thr Thr Leu Ser Ile Leu Phe Val Thr Tyr Cys Gly Val
 290 295 300
 Gln Leu Val Lys Glu Arg Glu Arg Thr Leu Ala Leu Glu Glu Glu Gln
 305 310 315 320
 Lys Gln Asp Lys Glu Lys Pro Glu
 325

<210> 4453

<211> 685

<212> DNA

<213> Homo sapiens

<400> 4453

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 agccatgatt atcctagttg tcaccttgca cacctgccat ccggtgccat ctctggctg
 120
 gcacatctat acccactctg gctctgaaag gcttgtcaac caaaaatggg cagctggggc
 180

taaggcatat ttaaacaag gtcctaaagg acccctttca cttgggtcta gcatccagcc
 240
 tctctctcag caaaggcagg attgtggtcc cttgtgtttt ctgaacaggg ccagggcag
 300
 ccaaggcatg ccactactgc agcactcaac cctctgggtca cagtggagtc gccgggtccag
 360
 cctgaaatat tactacagag gagaaagacc cattcttgct atgttgctct atcttccag
 420
 tccaaaaaca gtccatgta gcttcagctg ctccgaaatc aggtcacaga acagcaggag
 480
 acattccttt ggcaaaaaag gacacgcttt tgtcctgtat cttatactgg taagtgaagc
 540
 tctgatcccg gtggactgcg ggctgcatg gtctctcca caggatctc agctacagag
 600
 acagagaaga atgaaagagg agcagccacc ccaggacctg ctccactggg aacccaccc
 660
 taccttctct gtgcccttca cgcgt
 685

<210> 4454

<211> 207

<212> PRT

<213> Homo sapiens

<400> 4454

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ile | Ile | Leu | Val | Val | Thr | Leu | His | Thr | Cys | His | Pro | Val | Pro | Ser |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Pro | Gly | Trp | His | Ile | Tyr | Thr | His | Ser | Gly | Ser | Glu | Arg | Leu | Val | Asn |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gln | Lys | Trp | Ala | Ala | Gly | Ala | Lys | Ala | Tyr | Leu | Asn | Lys | Gly | Ser | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Pro | Leu | Ser | Leu | Gly | Ser | Ser | Ile | Gln | Pro | Leu | Ser | Gln | Gln | Arg |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gln | Asp | Cys | Gly | Pro | Leu | Cys | Phe | Leu | Asn | Arg | Ala | Gln | Gly | Ser | Gln |
| 65 | | | | 70 | | | | | | 75 | | | | | 80 |
| Gly | Met | Pro | Ser | Leu | Gln | His | Ser | Thr | Leu | Trp | Ser | Gln | Trp | Ser | Arg |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Arg | Ser | Ser | Leu | Lys | Tyr | Tyr | Tyr | Arg | Gly | Glu | Arg | Pro | Ile | Leu | Ala |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Met | Leu | Leu | Tyr | Leu | Pro | Arg | Pro | Lys | Thr | Val | Leu | Cys | Ser | Phe | Ser |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Cys | Ser | Glu | Ile | Arg | Ser | Gln | Asn | Ser | Arg | Arg | His | Ser | Phe | Gly | Lys |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Lys | Gly | His | Ala | Phe | Val | Leu | Tyr | Leu | Ile | Leu | Val | Ser | Glu | Ala | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ile | Pro | Val | Asp | Cys | Gly | Leu | Arg | Trp | Ser | Pro | Pro | Gln | Asp | Pro | Gln |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Leu | Gln | Arg | Gln | Arg | Arg | Met | Lys | Glu | Glu | Gln | Pro | Pro | Gln | Asp | Leu |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Leu | His | Trp | Glu | Pro | His | Pro | Thr | Phe | Ser | Val | Pro | Phe | Thr | Arg | |
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<210> 4455

<211> 882

<212> DNA

<213> Homo sapiens

<400> 4455

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 aagctgttca ttgggcagat ccccgcaac ctggatgaga aggacctcaa gcccctcttc
 180
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 240
 aaaggctgcg ccttcttcac ctactgcgag cgtgagtcag cgctgaaggc ccagagcgcg
 300
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 360
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 420
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 780
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<210> 4456

<211> 261

<212> PRT

<213> Homo sapiens

<400> 4456

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Asp | His | Asp | Ala | Ile | Lys | Leu | Phe | Ile | Gly | Gln | Ile | Pro | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Leu | Asp | Glu | Lys | Asp | Leu | Lys | Pro | Leu | Phe | Glu | Glu | Phe | Gly | Lys |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ile | Tyr | Glu | Leu | Thr | Val | Leu | Lys | Asp | Arg | Phe | Thr | Gly | Met | His | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | Cys | Ala | Phe | Leu | Thr | Tyr | Cys | Glu | Arg | Glu | Ser | Ala | Leu | Lys | Ala |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Gln | Ser | Ala | Leu | His | Glu | Gln | Lys | Thr | Leu | Pro | Gly | Met | Asn | Arg | Pro |
| 65 | | | | 70 | | | | | 75 | | | | 80 | | |
| Ile | Gln | Val | Lys | Pro | Ala | Asp | Ser | Glu | Ser | Arg | Gly | Asp | Ser | Ser | Cys |
| | | | 85 | | | | | 90 | | | | 95 | | | |
| Leu | Arg | Gln | Pro | Pro | Ser | His | Arg | Lys | Leu | Phe | Val | Gly | Met | Leu | Asn |

100 105 110
 Lys Gln Gln Ser Glu Asp Asp Val Arg Arg Leu Phe Glu Ala Phe Gly
 115 120 125
 Asn Ile Glu Glu Cys Thr Ile Leu Arg Gly Pro Asp Gly Asn Ser Lys
 130 135 140
 Gly Cys Ala Phe Val Lys Tyr Ser Ser His Ala Glu Ala Gln Ala Ala
 145 150 155 160
 Ile Asn Ala Leu His Gly Ser Gln Thr Met Pro Gly Ala Ser Ser Ser
 165 170 175
 Leu Val Val Lys Phe Ala Asp Thr Asp Lys Glu Arg Thr Met Arg Arg
 180 185 190
 Met Gln Gln Met Ala Gly Gln Met Gly Met Phe Asn Pro Met Ala Ile
 195 200 205
 Pro Phe Gly Ala Tyr Gly Ala Tyr Ala Gln Ala Leu Met Gln Gln Gln
 210 215 220
 Ala Ala Leu Met Ala Ser Val Ala Gln Gly Gly Tyr Leu Asn Pro Met
 225 230 235 240
 Ala Ala Phe Ala Ala Ala Gln Met Gln Gln Met Ala Ala Leu Asn Met
 245 250 255
 Asn Gly Leu Ala Ala
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<210> 4457

<211> 1491

<212> DNA

<213> Homo sapiens

<400> 4457

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 120
 tatgcgggga catcggggca cccaggagg gctgaccca gtcacctgg ccctgccttc
 180
 cccctgcagc tgggtgtacct tatgaacaac cagaagggcc agctggtcaa gaggctcgtg
 240
 cccgtggagc agcttctgat gtatcaacag cacaccagcc actatgactt ggagcggaaa
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 gggggctact tgatgtcttc cttcatcgac ttctgcccct tctcggtgat gcgcctgcgg
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 420
 gtcttgagc gtcgggctt ccacaacgag aactcgctcg ccatctacca gggcctggtc
 480
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 540
 aattggcgaa gcgcgggcgc cgtgtccata gaaatggaca gctacgaaaa gatctacaac
 600
 ctcgagtcgc cgtacgagct gccggagcgc attttcttg acaagggcac tgagtacagc
 660
 ttcccatct tctgtcggc gcagggccac tcgttccgga cgcagtcaga actcggtctg
 720
 cgcgggacca gaggggagcc cgaagggcgc ggcgagggct accagaatct gggagcctgg
 780

ggggcgggga caccatcgga ggggcggggc ctgtctgtgg acgtgggcgt ggtgctggcc
 840
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 900
 ctattttcga ttacgctcaa ggataaaaag ctttgctatg accaagggcat tagtggacat
 960
 caccttatgg agacttccat gacgggtcaat gtgaggtcca agcctggagg ggagggcaag
 1020
 cgcttgccct tcgacatcac ctacacgctg gaatacagcc gcctgaagaa caaacactac
 1080
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 1200
 gaaatctacc gtttcaacag cccctgggac aagaccaaca gccttatctg gaccacgagg
 1260
 accacaagga ccaccaaaga ctcagccttt cacatcatgt cccacgagag cccagggcatc
 1320
 gagtggctct gtctggagaa tgccccatgc tatgacaatg ttccccaagg catctttgcc
 1380
 cctgaattct tcttcaaggt gttggtgagc aataggtgag ccaggcaagt ggcccagggtg
 1440
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 1491

<210> 4458

<211> 405

<212> PRT

<213> Homo sapiens

<400> 4458

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Asn | Gln | Lys | Gly | Gln | Leu | Val | Lys | Arg | Leu | Val | Pro | Val | Glu |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Gln | Leu | Leu | Met | Tyr | Gln | Gln | His | Thr | Ser | His | Tyr | Asp | Leu | Glu | Arg |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Lys | Gly | Gly | Tyr | Leu | Met | Leu | Ser | Phe | Ile | Asp | Phe | Cys | Pro | Phe | Ser |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Val | Met | Arg | Leu | Arg | Ser | Leu | Pro | Ser | Pro | Gln | Arg | Tyr | Thr | Arg | Gln |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Arg | Tyr | Arg | Ala | Arg | Pro | Pro | Arg | Val | Leu | Glu | Arg | Ser | Gly | Phe |
| 65 | | | | 70 | | | | | | 75 | | | | 80 | |
| His | Asn | Glu | Asn | Ser | Leu | Ala | Ile | Tyr | Gln | Gly | Leu | Val | Tyr | Tyr | Leu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Trp | Leu | His | Ser | Val | Tyr | Asp | Lys | Asp | Tyr | Tyr | Phe | Phe | Leu | Ala |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ser | Asn | Trp | Arg | Ser | Ala | Gly | Gly | Val | Ser | Ile | Glu | Met | Asp | Ser | Tyr |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Glu | Lys | Ile | Tyr | Asn | Leu | Glu | Ser | Ala | Tyr | Glu | Leu | Pro | Glu | Arg | Ile |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Phe | Leu | Asp | Lys | Gly | Thr | Glu | Tyr | Ser | Phe | Ala | Ile | Phe | Leu | Ser | Ala |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Gln | Gly | His | Ser | Phe | Arg | Thr | Gln | Ser | Glu | Leu | Gly | Leu | Arg | Gly | Thr |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Arg | Val | Glu | Pro | Glu | Gly | Arg | Gly | Glu | Gly | Tyr | Gln | Asn | Leu | Gly | Ala |

180 185 190
 Trp Gly Ala Gly Thr Pro Ser Glu Gly Arg Gly Leu Ser Val Asp Val
 195 200 205
 Gly Val Val Leu Ala Asp Pro Gly Cys Ile Glu Ala Ser Val Lys Gln
 210 215 220
 Glu Val Leu Ile Asn Arg Asn Ser Val Leu Phe Ser Ile Thr Leu Lys
 225 230 235 240
 Asp Lys Lys Leu Cys Tyr Asp Gln Gly Ile Ser Gly His His Leu Met
 245 250 255
 Glu Thr Ser Met Thr Val Asn Val Arg Ser Lys Pro Gly Gly Glu Gly
 260 265 270
 Lys Arg Leu Ala Phe Asp Ile Thr Tyr Thr Leu Glu Tyr Ser Arg Leu
 275 280 285
 Lys Asn Lys His Tyr Phe Asp Cys Val Asn Val Asn Pro Glu Met Pro
 290 295 300
 Cys Phe Leu Phe Arg Asp Ser Val Tyr Val Leu Leu Val Val Gly Gly
 305 310 315 320
 Gly Pro Thr Leu Asp Ser Leu Lys Asp Tyr Ser Glu Asp Glu Ile Tyr
 325 330 335
 Arg Phe Asn Ser Pro Leu Asp Lys Thr Asn Ser Leu Ile Trp Thr Thr
 340 345 350
 Arg Thr Thr Arg Thr Thr Lys Asp Ser Ala Phe His Ile Met Ser His
 355 360 365
 Glu Ser Pro Gly Ile Glu Trp Leu Cys Leu Glu Asn Ala Pro Cys Tyr
 370 375 380
 Asp Asn Val Pro Gln Gly Ile Phe Ala Pro Glu Phe Phe Phe Lys Val
 385 390 395 400
 Leu Val Ser Asn Arg
 405

<210> 4459
 <211> 1114
 <212> DNA
 <213> Homo sapiens

<400> 4459
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 120
 gccgattgat ctaagaaact ttattgctca gaaccttccc tccctgggca atggaaagag
 180
 ctttggagac cagcccatgg ggacagagtc agaggcactg ggtgtaaaaa aagagcgagc
 240
 gtgtggcaca tttggtccat tgtcatgtgt gggatatggc ggaggagggg gtaatctaga
 300
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 360
 ccaaagcaaa gcagatgagg tcagcctggc ttgggttgag ggctcagtgc ctcttagcct
 420
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 480
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 540

agacagaacc agcgagagac accagggagc tcagcagcat caggacagag gccagcgtg
 600
 tccgcaggca acctaacaat agctgtagtg tgtagaagat gcaaccgaat atgctgttgg
 660
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 720
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 780
 aatcccggtc ccgggcgcgc gccgccttca cgtgcagcgc gtagagcgag agcactaagc
 840
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 900
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 960
 aatggccgcg cccctcctgg ccctctgact cggcgattgg ccggccgtgc tcgcactcca
 1020
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 1114

<210> 4460

<211> 121

<212> PRT

<213> Homo sapiens

<400> 4460

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Arg | Cys | Pro | Arg | Arg | Arg | Ala | Arg | Gly | Asn | Pro | Gly | Pro | Gly | Arg | 15 |
| 1 | | | | 5 | | | | | 10 | | | | | | | |
| Ala | Pro | Pro | Ser | Arg | Ala | Ala | Arg | Arg | Ala | Arg | Ala | Leu | Ser | Pro | Ser | 30 |
| | | | 20 | | | | | 25 | | | | | | | | |
| Gly | Lys | Glu | Arg | Ala | Ala | Pro | Ser | Gln | Gly | Ser | Pro | Arg | Cys | Cys | Pro | 45 |
| | | 35 | | | | 40 | | | | | | 45 | | | | |
| Leu | Ser | Pro | Gly | Ser | Ala | Arg | Gly | Ala | Arg | Gly | Glu | Asn | Gln | Pro | Arg | 60 |
| | | 50 | | | | 55 | | | | | 60 | | | | | |
| Ser | Arg | Gly | Arg | Ala | Ala | Asn | Gly | Arg | Ala | Pro | Pro | Gly | Pro | Leu | Thr | 80 |
| | | | | 70 | | | | | 75 | | | | | | | |
| Arg | Arg | Leu | Ala | Gly | Arg | Ala | Arg | Thr | Pro | Arg | Pro | Lys | Trp | Leu | Phe | 95 |
| | | | | 85 | | | | | 90 | | | | | | | |
| Gln | Gly | Ala | Ser | Gln | Ala | Gly | Glu | Leu | Gly | Lys | Gln | Arg | Arg | Met | Pro | 110 |
| | | | 100 | | | | | 105 | | | | | | | | |
| Gly | Leu | Val | Lys | Arg | Val | Arg | Asp | Val | | | | | | | | |
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<210> 4461

<211> 488

<212> DNA

<213> Homo sapiens

<400> 4461

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 120

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 180
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 240
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 300
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 360
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 488

<210> 4462
 <211> 96
 <212> PRT
 <213> Homo sapiens

<400> 4462
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 Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu Ala Asp Phe Pro Lys Glu
 35 40 45
 Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe Arg Gly Ala Val Ala Ile
 50 55 60
 Val Thr Glu Thr Glu Glu Val Gly Cys Pro Ala Leu Leu Pro Ile Pro
 65 70 75 80
 Ser Leu Pro Thr Lys Pro Gln Gly Pro Leu Phe Pro Pro Ser Gln
 85 90 95

<210> 4463
 <211> 2662
 <212> DNA
 <213> Homo sapiens

<400> 4463
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 120
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 180
 gatgacgcga gcggtgaggg aaccggaac aattccttca cagaacaatt gaggcgaggc
 240
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 300
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 360
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 420

ctgggcggtg aggaaggcgt ctcccggatc tacgcagacc ccaccaagag gctggagctg
480
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660
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840
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960
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1080
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1920
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1980
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2040

ctctggctct gaggggttag ggacatcccc aaagggtata ccctggctct gccacccatg
 2100
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 2160
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 2220
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 2460
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 2520
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 2580
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 2640
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 2662

<210> 4464

<211> 519

<212> PRT

<213> Homo sapiens

<400> 4464

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Glu | Ala | Ala | Asp | Leu | Gly | Leu | Gly | Ala | Ala | Val | Pro | Val | 1 | 5 | 10 | 15 |
| Glu | Leu | Arg | Arg | Glu | Arg | Arg | Met | Val | Cys | Val | Glu | Tyr | Pro | Gly | Val | 20 | 25 | 30 | |
| Val | Arg | Asp | Val | Ala | Lys | Met | Leu | Pro | Thr | Leu | Gly | Gly | Glu | Glu | Gly | 35 | 40 | 45 | |
| Val | Ser | Arg | Ile | Tyr | Ala | Asp | Pro | Thr | Lys | Arg | Leu | Glu | Leu | Tyr | Phe | 50 | 55 | 60 | |
| Arg | Pro | Lys | Asp | Pro | Tyr | Cys | His | Pro | Val | Cys | Ala | Asn | Arg | Phe | Ser | 65 | 70 | 75 | 80 |
| Thr | Ser | Ser | Leu | Leu | Leu | Arg | Ile | Arg | Lys | Arg | Thr | Arg | Arg | Gln | Lys | 85 | 90 | 95 | |
| Gly | Val | Leu | Gly | Thr | Glu | Ala | His | Ser | Glu | Val | Thr | Phe | Asp | Met | Glu | 100 | 105 | 110 | |
| Ile | Leu | Gly | Ile | Ile | Ser | Thr | Ile | Tyr | Lys | Phe | Gln | Gly | Met | Ser | Asp | 115 | 120 | 125 | |
| Phe | Gln | Tyr | Leu | Ala | Val | His | Thr | Glu | Ala | Gly | Gly | Lys | His | Thr | Ser | 130 | 135 | 140 | |
| Met | Tyr | Asp | Lys | Val | Leu | Met | Leu | Arg | Pro | Glu | Lys | Glu | Ala | Phe | Phe | 145 | 150 | 155 | 160 |
| His | Gln | Glu | Leu | Pro | Leu | Tyr | Ile | Pro | Pro | Pro | Ile | Phe | Ser | Arg | Leu | 165 | 170 | 175 | |
| Asp | Ala | Pro | Val | Asp | Tyr | Phe | Tyr | Arg | Pro | Glu | Thr | Gln | His | Arg | Glu | 180 | 185 | 190 | |
| Gly | Tyr | Asn | Asn | Pro | Pro | Ile | Ser | Gly | Glu | Asn | Leu | Ile | Gly | Leu | Ser | | | | |

195 200 205
 Arg Ala Arg Arg Pro His Asn Ala Ile Phe Val Asn Phe Glu Asp Glu
 210 215 220
 Glu Val Pro Lys Gln Pro Leu Glu Ala Ala Ala Gln Thr Trp Arg Arg
 225 230 235 240
 Val Cys Thr Asn Pro Val Asp Arg Lys Val Glu Glu Glu Leu Arg Lys
 245 250 255
 Leu Phe Asp Ile Arg Pro Ile Trp Ser Arg Asn Ala Val Lys Ala Asn
 260 265 270
 Ile Ser Val His Pro Asp Lys Leu Lys Val Leu Leu Pro Phe Ile Ala
 275 280 285
 Tyr Tyr Met Ile Thr Gly Pro Trp Arg Ser Leu Trp Ile Arg Phe Gly
 290 295 300
 Tyr Asp Pro Arg Lys Asn Pro Asp Ala Lys Ile Tyr Gln Val Leu Asp
 305 310 315 320
 Phe Arg Ile Arg Cys Gly Met Lys His Gly Tyr Ala Pro Ser Asp Leu
 325 330 335
 Pro Val Lys Ala Lys Arg Ser Thr Tyr Asn Tyr Ser Leu Pro Ile Thr
 340 345 350
 Val Lys Lys Thr Ser Ser Gln Leu Val Thr Met His Asp Leu Lys Gln
 355 360 365
 Gly Leu Gly Arg Ser Gly Thr Ser Gly Ala Arg Lys Pro Ala Ser Ser
 370 375 380
 Lys Tyr Lys Leu Lys Asp Ser Val Tyr Ile Phe Arg Glu Gly Ala Leu
 385 390 395 400
 Pro Pro Tyr Arg Gln Met Phe Tyr Gln Leu Cys Asp Leu Asn Val Glu
 405 410 415
 Glu Leu Gln Lys Ile Ile His Arg Asn Asp Gly Ala Glu Asn Ser Cys
 420 425 430
 Thr Glu Arg Asp Gly Trp Cys Leu Pro Lys Thr Ser Asp Glu Leu Arg
 435 440 445
 Asp Thr Met Ser Leu Met Ile Arg Gln Thr Ile Arg Ser Lys Arg Pro
 450 455 460
 Ala Leu Phe Ser Ser Ser Ala Lys Ala Asp Gly Gly Lys Glu Gln Leu
 465 470 475 480
 Thr Tyr Glu Ser Gly Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu
 485 490 495
 Glu Glu Glu Asp Phe Lys Pro Ser Asp Gly Ser Glu Asn Glu Met Glu
 500 505 510
 Thr Glu Ile Leu Asp Tyr Val
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<210> 4465

<211> 1291

<212> DNA

<213> Homo sapiens

<400> 4465

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120

ngcgccgtgg ggctagtggg cgccgtgaag gccaccgacc agtactgcgc ccgcctccgc

180

caggccggct cggccgcgcc ccggccaccg cgggcccagc agccacagca gccatcccaa
 240
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 300
 ggagctcgat ggaagcctct cagtgtctcc acgccacacn agctctacct gctctgctgc
 360
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 420
 cggtttcccta tactcatccg gcagggtggcg gccgccagcc acttcgggtc aactattctg
 480
 catgaaagca agatgttgct caaatgccaa ggtgtgtctg accaagctgt ggccgaggcc
 540
 ctgtgctcta taatgctctt agaagagagt tctcctcgcc aagccctcac agacttctg
 600
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 660
 aaggctcaga tttgctcatt agtggagttg ctggccacca ctctgaagca agctcatgcc
 720
 cttttctaca ctttgccaga aggactgctg ccagatccag ccttgccatg tggcttgctc
 780
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 840
 caggaagaga tgaaactctg cagctggttt aaacacctgc cagcatccat cgctgagttc
 900
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 960
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 1020
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 1080
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 1140
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 1200
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 1260
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 1291

<210> 4466

<211> 93

<212> PRT

<213> Homo sapiens

<400> 4466

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Glu | Arg | Gln | Val | Arg | Ala | Glu | Ile | Glu | His | Lys | Lys | Glu | Glu |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Leu | Arg | Gln | Met | Val | Gly | Glu | Arg | Tyr | Arg | Asp | Leu | Ile | Glu | Ala | Xaa |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Thr | Ile | Gly | Gln | Met | Arg | Arg | Xaa | Ala | Val | Gly | Leu | Val | Asp | Ala |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Val | Lys | Ala | Thr | Asp | Gln | Tyr | Cys | Ala | Arg | Leu | Arg | Gln | Ala | Gly | Ser |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Ala | Ala | Pro | Arg | Pro | Pro | Arg | Ala | Gln | Gln | Pro | Gln | Gln | Pro | Ser | Gln |

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<210> 4468
<211> 170
<212> PRT
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<213> Homo sapiens

<400> 4468

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Xaa Asp Val Pro Lys Val Glu Val Leu Glu Arg Glu Leu Ala Trp Leu
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Lys Glu His Leu Ser Gln Leu Glu Ser Pro Val Val Phe Cys His Asn
      20           25           30
Asp Leu Leu Cys Lys Asn Ile Ile Tyr Asp Ser Ile Lys Gly His Val
      35           40           45
Arg Phe Ile Asp Tyr Glu Tyr Ala Gly Tyr Asn Tyr Gln Ala Phe Asp
      50           55           60
Ile Gly Asn His Phe Asn Glu Phe Ala Gly Val Asn Glu Val Asp Tyr
65           70           75           80
Cys Leu Tyr Pro Ala Arg Glu Thr Gln Leu Gln Trp Leu His Tyr Tyr
      85           90           95
Leu Gln Ala Gln Lys Gly Met Ala Val Thr Pro Arg Glu Val Gln Arg
      100           105           110
Leu Tyr Val Gln Val Asn Lys Phe Ala Leu Ala Ser His Phe Phe Trp
      115           120           125
Ala Leu Trp Ala Leu Ile Gln Asn Gln Tyr Ser Thr Ile Asp Phe Asp
      130           135           140
Phe Leu Arg Tyr Ala Val Ile Arg Phe Asn Gln Tyr Phe Lys Val Lys
145           150           155           160
Pro Gln Ala Ser Ala Leu Glu Met Pro Lys
      165           170

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<210> 4469

<211> 409

<212> DNA

<213> Homo sapiens

<400> 4469

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120
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180
gtgctttaga ggcctcctgc gaggccttgggt tttgaagctt taacaggcct ccctcccatc
240
tggaaatagg tagctgtgtc tgagactcct ggagaacaat taatatgagg gccaggcaga
300
tcacaatttc aggaaaatgg ctaccctgtg aggagagaaa gccaccaat gatgctgata
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409

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<210> 4470

<211> 55

<212> PRT

<213> Homo sapiens

<400> 4470

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Ile Tyr Asp Ala Gln His Ala Asn Leu Ala Gly Thr Leu Ser Gly His

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | | 5 | | 10 | | 15 | | | | | | | | | |
| Ala | Ser | Trp | Val | Leu | Asn | Val | Ala | Phe | Cys | Pro | Asp | Asp | Thr | His | Phe |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Val | Ser | Arg | Ser | Gln | Cys | Trp | Ser | Gly | Leu | Gly | Trp | Pro | Arg | Gln | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Glu | Ser | Arg | Arg | Trp | Thr | Thr | | | | | | | | | |
| | 50 | | | | | 55 | | | | | | | | | |

<210> 4471

<211> 1771

<212> DNA

<213> Homo sapiens

<400> 4471

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120
catccagcag gcgtttaata aatggccaag tcattgtttg ggtttctaaa taaggctctc
180
ctaattggccg ggtctggcca cggctcccagt gtccctgggc agccctccga ggggcccggca
240
cagggcgcac tataaatgag cggctgcgca cgcaggggca ctgcaacgcg gaggagcagg
300
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360
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420
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480
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540
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600
gcgcgccacg aggagcgcgc ggatgagcac ggattcgtcg cgcgcgagtt ccaccgtcgc
660
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720
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780
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840
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900
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960
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1020
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1080
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1140
aagacatccg ggtactacat ttccatcctt tccctatctt gacaccaaata tatggtgtag
1200

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 1260
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 1320
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 1380
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 1440
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 1620
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 1771

<210> 4472

<211> 160

<212> PRT

<213> Homo sapiens

<400> 4472

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ile | Pro | Val | Pro | Val | Gln | Pro | Ser | Trp | Leu | Arg | Arg | Ala | Ser |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Ala | Pro | Leu | Pro | Gly | Leu | Ser | Ala | Pro | Gly | Arg | Leu | Phe | Asp | Gln | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Gly | Glu | Gly | Leu | Leu | Glu | Ala | Glu | Leu | Ala | Ala | Leu | Cys | Pro | Thr |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Thr | Leu | Ala | Pro | Tyr | Tyr | Leu | Arg | Ala | Pro | Ser | Val | Ala | Leu | Pro | Val |
| | | | 50 | | | | 55 | | | | 60 | | | | |
| Ala | Gln | Val | Pro | Thr | Asp | Pro | Gly | His | Phe | Ser | Val | Leu | Leu | Asp | Val |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Lys | His | Phe | Ser | Pro | Glu | Glu | Ile | Ala | Val | Lys | Val | Val | Gly | Glu | His |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Val | Glu | Val | His | Ala | Arg | His | Glu | Glu | Arg | Pro | Asp | Glu | His | Gly | Phe |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Val | Ala | Arg | Glu | Phe | His | Arg | Arg | Tyr | Arg | Leu | Pro | Pro | Gly | Val | Asp |
| | | | 115 | | | | | 120 | | | | | 125 | | |
| Pro | Ala | Ala | Val | Thr | Ser | Ala | Leu | Ser | Pro | Glu | Gly | Val | Leu | Ser | Ile |
| | | | 130 | | | | 135 | | | | 140 | | | | |
| Gln | Ala | Ala | Pro | Ala | Ser | Ala | Gln | Ala | Pro | Pro | Ala | Ala | Ala | Lys | |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |

<210> 4473

<211> 1255

<212> DNA

<213> Homo sapiens

<400> 4473

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 120
 ttggttaagg aaatgaccaa ccagtagcgt attctcttca aacaagagca agcccatgat
 180
 gatgccattt ggtcagttgc ttgggggaca aacaagaagg aaaactctga gacagtggtc
 240
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 300
 cagtggagtc tggagggaca tcagctggga gtggtgtctg tggacatcag ccacaccctt
 360
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 420
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 480
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 540
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 600
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 660
 attgcaactg gaaaacttct gcataccctg gaaggccatg ccatgcccat tcgctccttg
 720
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 780
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 1020
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 agcatttatt gtagcaaaga cttaaatttt gtagatacaa tatgaatctt ttcattgttt
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 1255

<210> 4474

<211> 305

<212> PRT

<213> Homo sapiens

<400> 4474

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Asn | Gln | Tyr | Gly | Ile | Leu | Phe | Lys | Gln | Glu | Gln | Ala | His | Asp |
| 1 | | | 5 | | | | | 10 | | | | | 15 | | |
| Asp | Ala | Ile | Trp | Ser | Val | Ala | Trp | Gly | Thr | Asn | Lys | Lys | Glu | Asn | Ser |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Glu | Thr | Val | Val | Thr | Gly | Ser | Leu | Asp | Asp | Leu | Val | Lys | Val | Trp | Lys |

35 40 45
 Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly His Gln
 50 55 60
 Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile Ala Ala
 65 70 75 80
 Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu Asn Gly
 85 90 95
 Lys Gln Met Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp Thr Leu
 100 105 110
 Ala Phe Ser Pro Asp Ser Gln His Leu Ala Thr Gly Thr His Met Gly
 115 120 125
 Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr Ser Leu
 130 135 140
 Asp Thr Arg Gly Lys Phe Ile Leu Ser Ile Ala Tyr Ser Pro Asp Gly
 145 150 155 160
 Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile Phe Asp
 165 170 175
 Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala Met Pro
 180 185 190
 Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val Thr Ala
 195 200 205
 Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Gln His Ala Asn Leu
 210 215 220
 Ala Gly Thr Leu Ser Gly His Ala Ser Trp Val Leu Asn Val Ala Phe
 225 230 235 240
 Cys Pro Asp Asp Thr His Phe Val Ser Ser Ser Ser Asp Lys Ser Val
 245 250 255
 Lys Val Trp Asp Val Gly Thr Arg Thr Cys Val His Thr Phe Phe Asp
 260 265 270
 His Gln Asp Gln Val Trp Gly Val Lys Tyr Asn Gly Asn Gly Ser Lys
 275 280 285
 Ile Val Ser Val Gly Asp Asp Gln Glu Ile His Ile Tyr Asp Cys Pro
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 Ile
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<210> 4475

<211> 475

<212> DNA

<213> Homo sapiens

<400> 4475

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 240
 ctgccctcag acctcctcct ggggtgcagcc cgttcccact tgagagggag gtggtcttca
 300
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 360

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<210> 4476

<211> 106

<212> PRT

<213> Homo sapiens

<400> 4476

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Cys | Leu | Pro | Pro | Lys | Val | Lys | Thr | Thr | Ser | Leu | Ser | Ser | Gly | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Leu | His | Pro | Gly | Gly | Gly | Leu | Arg | Ala | Ala | Gly | Arg | Gln | Gln | Met |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Arg | Arg | Ser | Ser | Ser | Ser | Gln | Pro | Leu | Pro | Gln | Ser | Ala | Arg | Thr |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gly | His | Thr | Glu | Gly | Ser | Val | Ala | Leu | His | Gly | Ser | Pro | Ala | Ser | Arg |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gln | Thr | Ser | Gln | Arg | Trp | Thr | Val | Cys | Gln | Gly | Trp | Asp | Trp | Asn | Ser |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Arg | Arg | Ser | Leu | Asp | Thr | Ser | Gly | Ile | Arg | Glu | Thr | Ser | Leu | Gly | Arg |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Tyr | Pro | Leu | Pro | Ser | Ser | Arg | Val | His | Ala | | | | | | |
| | | | 100 | | | | | 105 | | | | | | | |

<210> 4477

<211> 1153

<212> DNA

<213> Homo sapiens

<400> 4477

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 120
 taggccaggg cagatgggat atgacgaatg gactgccagc tggatacaag gatgctcacc
 180
 aagcaccaag ttctcacaag ttattttatg tgactttgca ggaactgagg cattatatct
 240
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 300
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 360
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 420
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 660

agtcaactta cactttttcc ttcttcattc acaaagctct tcttccttgg gccctgggtat
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 960
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 1020
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 1153

<210> 4478

<211> 118

<212> PRT

<213> Homo sapiens

<400> 4478

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Lys | Arg | Gly | Glu | Val | Gly | Lys | Ile | Lys | Glu | Cys | Leu | Glu | Gly |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Lys | Thr | Glu | Tyr | Gln | Glu | Ser | Glu | Phe | Leu | Ser | Pro | Ala | Tyr | Ser | Asp |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Lys | Pro | Leu | Gly | Leu | Cys | Glu | Asn | Ala | Asp | Val | Leu | Asp | Arg | Arg | Leu |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Trp | Glu | Gly | Asn | Met | Lys | Glu | Glu | Asn | Asn | Asn | Glu | Ser | Lys | Ser | Thr |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Ser | Ile | Pro | Gly | His | Phe | Ile | His | Phe | Gln | Asp | Tyr | Cys | Ala | Pro | Ile |
| 65 | | | | 70 | | | | 75 | | | | | 80 | | |
| Ser | Thr | Leu | Met | Val | Cys | Val | Asp | Thr | Ala | Gln | Gly | Cys | Ile | Ser | Leu |
| | | 85 | | | | | | 90 | | | | | 95 | | |
| Arg | Cys | His | Thr | Phe | Pro | Leu | Val | Ser | Ser | Asp | Ile | Met | Pro | Gln | Phe |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Leu | Gln | Ser | His | Ile | Lys | | | | | | | | | | |
| | | 115 | | | | | | | | | | | | | |

<210> 4479

<211> 2158

<212> DNA

<213> Homo sapiens

<400> 4479

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 120
 ggcgggccac gcgcagcaca gggagagatg agcagcacca gcagtaagag ggctccgacc
 180

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240
atctgtgccg agcccctccc ttccgaatatt ctcgagtggc actatgtcgt ccgaggccca
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gagatgaccc cttatgaagg tggctattac catggaaaac taatttttcc cagagaattt
360
cctttcaaac ctcccagtat ctatatgatc actcccacg ggaggtttaa gtgcaacacc
420
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480
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540
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600
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720
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780
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1680
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1800

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 1920
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 1980
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 2040
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 2158

<210> 4480

<211> 308

<212> PRT

<213> Homo sapiens

<400> 4480

Xaa Arg Arg Pro Ala Ala Gly Ser Val Gly Pro Ile Pro Gly Arg Cys
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 Gly Cys Phe Gly Arg Gly Pro Arg Phe Ser Ala Pro Cys Ser Gly Leu
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 Asp Tyr Gly Glu Pro Glu Arg Gly Gly Gly Pro Arg Ala Ala Gln Gly
 35 40 45
 Glu Met Ser Ser Thr Ser Ser Lys Arg Ala Pro Thr Thr Ala Thr Gln
 50 55 60
 Arg Leu Lys Gln Asp Tyr Leu Arg Ile Lys Lys Asp Pro Val Pro Tyr
 65 70 75 80
 Ile Cys Ala Glu Pro Leu Pro Ser Asn Ile Leu Glu Trp His Tyr Val
 85 90 95
 Val Arg Gly Pro Glu Met Thr Pro Tyr Glu Gly Gly Tyr Tyr His Gly
 100 105 110
 Lys Leu Ile Phe Pro Arg Glu Phe Pro Phe Lys Pro Pro Ser Ile Tyr
 115 120 125
 Met Ile Thr Pro Asn Gly Arg Phe Lys Cys Asn Thr Arg Leu Cys Leu
 130 135 140
 Ser Ile Thr Asp Phe His Pro Asp Thr Trp Asn Pro Ala Trp Ser Val
 145 150 155 160
 Ser Thr Ile Leu Thr Gly Leu Leu Ser Phe Met Val Glu Lys Gly Pro
 165 170 175
 Thr Leu Gly Ser Ile Glu Thr Ser Asp Phe Thr Lys Arg Gln Leu Ala
 180 185 190
 Val Gln Ser Leu Ala Phe Asn Leu Lys Asp Lys Val Phe Cys Glu Leu
 195 200 205
 Phe Pro Glu Val Val Glu Glu Ile Lys Gln Lys Gln Lys Ala Gln Asp
 210 215 220
 Glu Leu Ser Ser Arg Pro Gln Thr Leu Pro Leu Pro Asp Val Val Pro
 225 230 235 240
 Asp Gly Glu Thr His Leu Val Gln Asn Gly Ile Gln Leu Leu Asn Gly
 245 250 255
 His Ala Pro Gly Ala Val Pro Asn Leu Ala Gly Leu Gln Gln Ala Asn
 260 265 270
 Arg His His Gly Leu Leu Gly Gly Ala Leu Ala Asn Leu Phe Val Ile

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<210> 4481
<211> 320
<212> DNA
<213> Homo sapiens
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<210> 4482
<211> 101
<212> PRT
<213> Homo sapiens
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<210> 4483
<211> 1852
<212> DNA
<213> Homo sapiens
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3662

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180
aacaacctt taatttggtta ccattgaac ctgcttgagc gtgttggtt tgaagaagtc
240
attgtggtta caaccagga tggtcaaaag gctctatgtg cagaattcaa gatgaaaatg
300
aagccagata ttgtgtgtat tctgatgac gctgacatgg gaactgcaga ttctttgcgc
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420
gttgccctac atgaggttgt ggacctgttt agagcttatg atgcatcact tgctatgttg
480
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540
gtggagcagc gtgacttcat tggagtggac agcacaggaa agaggctgct cttcatggct
600
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660
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720
gtggatttcc taatggaaaa tgggtcaata acttctatcc ggagtgaact gattccatat
780
ttagtgagaa aacagttttc ctacagcttcc tcacaacagg gacaagaaga aaaagaggag
840
gatctaaaga aaaaggagct gaagtcctta gatatctaca gttttataaa agaagccaat
900
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960
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gctctctgtc cagaagaacc accagtccat tcgtcagccc agattgtcag caaacacctg
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gttggagttg acagcctcat tgggccagag acacagattg gagagaagtc atccattaag
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1680

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 1740
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 1852

<210> 4484

<211> 452

<212> PRT

<213> Homo sapiens

<400> 4484

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 20 25 30
 Lys Pro Leu Ile Trp Tyr Pro Leu Asn Leu Leu Glu Arg Val Gly Phe
 35 40 45
 Glu Glu Val Ile Val Val Thr Thr Arg Asp Val Gln Lys Ala Leu Cys
 50 55 60
 Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile Val Cys Ile Pro Asp
 65 70 75 80
 Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg Tyr Ile Tyr Pro Lys
 85 90 95
 Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp Leu Ile Thr Asp Val
 100 105 110
 Ala Leu His Glu Val Val Asp Leu Phe Arg Ala Tyr Asp Ala Ser Leu
 115 120 125
 Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile Glu Pro Val Pro Gly
 130 135 140
 Gln Lys Gly Lys Lys Lys Ala Val Glu Gln Arg Asp Phe Ile Gly Val
 145 150 155 160
 Asp Ser Thr Gly Lys Arg Leu Leu Phe Met Ala Asn Glu Ala Asp Leu
 165 170 175
 Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu Gln Lys His Pro Arg
 180 185 190
 Ile Arg Phe His Thr Gly Leu Val Asp Ala His Leu Tyr Cys Leu Lys
 195 200 205
 Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly Ser Ile Thr Ser Ile
 210 215 220
 Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys Gln Phe Ser Ser Ala
 225 230 235 240
 Ser Ser Gln Gln Gly Gln Glu Glu Lys Glu Glu Asp Leu Lys Lys Lys
 245 250 255
 Glu Leu Lys Ser Leu Asp Ile Tyr Ser Phe Ile Lys Glu Ala Asn Thr
 260 265 270
 Leu Asn Leu Ala Pro Tyr Asp Ala Cys Trp Asn Ala Cys Arg Gly Asp
 275 280 285
 Arg Trp Glu Asp Leu Ser Arg Ser Gln Val Arg Cys Tyr Val His Ile
 290 295 300
 Met Lys Glu Gly Leu Cys Ser Arg Val Ser Thr Leu Gly Leu Tyr Met
 305 310 315 320
 Glu Ala Asn Arg Gln Val Pro Lys Leu Leu Ser Ala Leu Cys Pro Glu

```

          325          330          335
Glu Pro Pro Val His Ser Ser Ala Gln Ile Val Ser Lys His Leu Val
          340          345          350
Gly Val Asp Ser Leu Ile Gly Pro Glu Thr Gln Ile Gly Glu Lys Ser
          355          360          365
Ser Ile Lys Arg Ser Val Ile Gly Ser Ser Cys Leu Ile Lys Asp Arg
          370          375          380
Val Thr Ile Thr Asn Cys Leu Leu Met Asn Ser Val Thr Val Glu Glu
          385          390          395          400
Gly Ser Asn Ile Gln Gly Ser Val Ile Cys Asn Asn Ala Val Ile Glu
          405          410          415
Lys Gly Ala Asp Ile Lys Asp Cys Leu Ile Gly Ser Gly Gln Arg Ile
          420          425          430
Glu Ala Lys Ala Lys Arg Val Asn Glu Val Ile Val Gly Asn Asp Gln
          435          440          445
Leu Met Glu Ile
          450

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<210> 4485
 <211> 513
 <212> DNA
 <213> Homo sapiens

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<400> 4485
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120
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180
cacaggcctt atagcgccct gtgcgtgccc cagcatttcc ctgcctagtg gggctccagg
240
cgggcagggt gacctccttc cccaggcagt tccacacctg atccccaaag tcagttctaa
300
tgaagtggat tcattcaaat actggtgggt ctggttgccc cgggtaagtg agggcacaga
360
gaaaaccccc aaatgtagag tatgtgacac agcacaaagc agtcccatgc caaactgatg
420
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480
tacttgcct actgtctcct atctatttca tga
513

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<210> 4486
 <211> 100
 <212> PRT
 <213> Homo sapiens

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<400> 4486
Met Gly Ser Gly Ile Pro His Pro His Pro Lys Cys Val Leu Pro Gln
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Pro Phe Val Phe Arg Pro Thr Gly Leu Ile Ala Pro Cys Ala Cys Pro
20      25      30
Ser Ile Ser Leu Pro Ser Gly Ala Pro Gly Gly Gln Gly Asp Leu Leu

```

```

      35              40              45
Pro Gln Ala Val Pro His Leu Ile Pro Lys Val Ser Ser Asn Glu Val
      50              55              60
Asp Ser Phe Lys Tyr Trp Trp Phe Trp Leu Ala Arg Val Ser Glu Gly
      65              70              75              80
Thr Glu Lys Thr Pro Lys Cys Arg Val Cys Asp Thr Ala Gln Ser Ser
      85              90              95
Pro Met Pro Asn
      100

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<210> 4487
 <211> 387
 <212> DNA
 <213> Homo sapiens

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<400> 4487
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120
ggaaagtttg atattttatt caatagagtt caagcaattc agaagaaaag tggaaacttt
180
gatctgctgt tgtgtgtagg aaatttcttt ggctccaccc aagatgctga atgggaggag
240
tataagactg gcatcaagaa agctcctatt cagacatatg tgcttggtgc taataaccag
300
gaaacagtaa aatatttcca ggatgctgat ggatgtgaat tagctgaaaa cattacttat
360
ctggggtcgta aaggtatctt cactgga
387

```

<210> 4488
 <211> 129
 <212> PRT
 <213> Homo sapiens

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<400> 4488
Xaa Arg Val Lys Ile Leu Phe Leu Phe Trp Ile Pro Asn Phe Arg Trp
1          5          10          15
Gln Ser Gln Pro Ile Leu Phe Gly Gln Met Ala Gln Lys Pro Leu Arg
      20          25          30
Leu Leu Ala Cys Gly Asp Val Glu Gly Lys Phe Asp Ile Leu Phe Asn
      35          40          45
Arg Val Gln Ala Ile Gln Lys Lys Ser Gly Asn Phe Asp Leu Leu Leu
      50          55          60
Cys Val Gly Asn Phe Phe Gly Ser Thr Gln Asp Ala Glu Trp Glu Glu
      65          70          75          80
Tyr Lys Thr Gly Ile Lys Lys Ala Pro Ile Gln Thr Tyr Val Leu Gly
      85          90          95
Ala Asn Asn Gln Glu Thr Val Lys Tyr Phe Gln Asp Ala Asp Gly Cys
      100          105          110
Glu Leu Ala Glu Asn Ile Thr Tyr Leu Gly Arg Lys Gly Ile Phe Thr
      115          120          125
Gly

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<210> 4489
<211> 2390
<212> DNA
<213> Homo sapiens

<400> 4489
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cagtacggag tcaaagttgt acttcaggct atgtacttgc tgtggaagtt gatgtggagg
120
gagccagggtg cctatatctt tctccagaac cccccagggtc tgcctagcat tgctgtctgc
180
tggttcgtgg gctgcctttg tggaagcaag ctgcgtcattg actggcacia ctatggctac
240
tccatcatgg gtctggtgca tggccccaac catcccctcg ttctgctggc caagtggtag
300
gagaagttct ttgggcgcct gtcccacctg aacctgtgtg ttaccaatgc tatgagagaa
360
gacctggcgg ataactggca catcagggtc gtgaccgtct acgacaagcc cgcattcttc
420
tttaaagaga cacctctgga cctgcagcac cggtcttca tgaagctggg cagcatgcac
480
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660
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780
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900
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960
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1140
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1380

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 1680
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 1740
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 1860
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 2100
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 2160
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 2220
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 2280
 tagaatgtgt tggcaaagct ctatgtgatc nctccctggg gacgtggagc cagttggaag
 2340
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 2390

<210> 4490

<211> 383

<212> PRT

<213> Homo sapiens

<400> 4490

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 Leu Leu Trp Lys Leu Met Trp Arg Glu Pro Gly Ala Tyr Ile Phe Leu
 35 40 45
 Gln Asn Pro Pro Gly Leu Pro Ser Ile Ala Val Cys Trp Phe Val Gly
 50 55 60
 Cys Leu Cys Gly Ser Lys Leu Val Ile Asp Trp His Asn Tyr Gly Tyr
 65 70 75 80
 Ser Ile Met Gly Leu Val His Gly Pro Asn His Pro Leu Val Leu Leu
 85 90 95
 Ala Lys Trp Tyr Glu Lys Phe Phe Gly Arg Leu Ser His Leu Asn Leu

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 100 | | 105 | | 110 | | | | | | | | | | |
| Cys | Val | Thr | Asn | Ala | Met | Arg | Glu | Asp | Leu | Ala | Asp | Asn | Trp | His | Ile |
| | 115 | | 120 | | 125 | | | | | | | | | | |
| Arg | Ala | Val | Thr | Val | Tyr | Asp | Lys | Pro | Ala | Ser | Phe | Phe | Lys | Glu | Thr |
| | 130 | | 135 | | 140 | | | | | | | | | | |
| Pro | Leu | Asp | Leu | Gln | His | Arg | Leu | Phe | Met | Lys | Leu | Gly | Ser | Met | His |
| | 145 | | 150 | | 155 | | | | | | | | | | |
| Ser | Pro | Phe | Arg | Ala | Arg | Ser | Glu | Pro | Glu | Asp | Pro | Val | Thr | Glu | Arg |
| | 165 | | 170 | | 175 | | | | | | | | | | |
| Ser | Ala | Phe | Thr | Glu | Arg | Asp | Ala | Gly | Ser | Gly | Leu | Val | Thr | Arg | Leu |
| | 180 | | 185 | | 190 | | | | | | | | | | |
| Arg | Glu | Arg | Pro | Ala | Leu | Leu | Val | Ser | Ser | Thr | Ser | Trp | Thr | Glu | Asp |
| | 195 | | 200 | | 205 | | | | | | | | | | |
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<211> 560

<212> PRT

<213> Homo sapiens

<400> 4496

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| Val | Gly | Lys | Thr | Ala | Cys | Gly | Phe | Ser | Leu | Met | Ser | Leu | Leu | Glu | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Asp | Pro | Asp | Trp | Thr | Pro | Asp | Gln | Tyr | Asp | Tyr | Ser | Tyr | Glu | Asp |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Tyr | Asn | Gln | Glu | Glu | Asn | Thr | Ser | Ser | Thr | Leu | Thr | His | Ala | Glu | Asn |
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| Pro | Asp | Trp | Tyr | Tyr | Thr | Glu | Asp | Gln | Ala | Asp | Pro | Cys | Gln | Pro | Asn |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Pro | Cys | Glu | His | Gly | Gly | Asp | Cys | Leu | Val | His | Gly | Ser | Thr | Phe | Thr |

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 Pro Ser Cys Ser Gln Val Val Pro Val Cys Arg Pro Asn Pro Cys Gln
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 Ala Cys Pro Asp Gln Phe Lys Gly Lys Phe Cys Glu Ile Gly Ser Asp
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 Asp Cys Tyr Val Gly Asp Gly Tyr Ser Tyr Arg Gly Lys Met Asn Arg
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 Gln Glu Asn Tyr Asn Met Phe Met Glu Asp Ala Glu Thr His Gly Ile
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 Gly Glu His Asn Phe Cys Arg Asn Pro Asp Ala Asp Glu Lys Pro Trp
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 Cys Phe Ile Lys Val Thr Asn Asp Lys Val Lys Trp Glu Tyr Cys Asp
 260 265 270
 Val Ser Ala Cys Ser Ala Gln Asp Val Ala Tyr Pro Glu Glu Ser Pro
 275 280 285
 Thr Glu Pro Ser Thr Lys Leu Pro Gly Phe Asp Ser Cys Gly Lys Thr
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 Glu Ile Ala Glu Arg Lys Ile Lys Arg Ile Tyr Gly Gly Phe Lys Ser
 305 310 315 320
 Thr Ala Gly Lys His Pro Trp Gln Ala Ser Leu Gln Ser Ser Leu Pro
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 Leu Thr Ile Ser Met Pro Gln Gly His Phe Cys Gly Gly Ala Leu Ile
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 His Pro Cys Trp Val Leu Thr Ala Ala His Cys Thr Asp Ile Lys Thr
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 Arg His Leu Lys Val Val Leu Gly Asp Gln Asp Leu Lys Lys Glu Glu
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 Phe His Glu Gln Ser Phe Arg Val Glu Lys Ile Phe Lys Tyr Ser His
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 Tyr Asn Glu Arg Asp Glu Ile Pro His Asn Asp Ile Ala Leu Leu Lys
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 420 425 430
 Thr Val Cys Leu Pro Asp Gly Ser Phe Pro Ser Gly Ser Glu Cys His
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 Ile Ser Gly Trp Gly Val Thr Glu Thr Gly Lys Gly Ser Arg Gln Leu
 450 455 460
 Leu Asp Ala Lys Val Lys Leu Ile Ala Asn Thr Leu Cys Asn Ser Arg
 465 470 475 480
 Gln Leu Tyr Asp His Met Ile Asp Asp Ser Met Ile Cys Ala Gly Asn
 485 490 495
 Leu Gln Lys Pro Gly Gln Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro
 500 505 510
 Leu Thr Cys Glu Lys Asp Gly Thr Tyr Tyr Val Tyr Gly Ile Val Ser

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| Trp | Gly | Leu | Glu | Cys | Gly | Lys | Arg | Pro | Gly | Val | Tyr | Thr | Gln | Val | Thr |
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| Lys | Phe | Leu | Asn | Trp | Ile | Lys | Ala | Thr | Ile | Lys | Ser | Glu | Ser | Gly | Phe |
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 35 40 45
 Pro Gly Asn Pro Val Gln Gly Gln Cys Gly Glu Glu Glu Asp Ser Leu

50 55 60
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 65 70 75 80
 Trp Pro Leu Ser Ala Arg Arg Glu Lys Gly Leu Asn Gln Glu Pro Gln
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 Gly Arg Gly Leu Ala Leu Gln Lys Met Gly Gln Glu Glu Glu Ser Pro
 100 105 110
 Pro Arg Glu Glu Arg Pro Gln Gln Ser Pro Lys Ala Ser Pro Gly Leu
 115 120 125
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 130 135 140
 Ser Phe Ala Gln Asn Gly Phe Tyr His Glu Ala Val Val Leu Phe Thr
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 Gln Ala Leu Lys Leu Asn Pro Gln Asp His Arg Leu Phe Gly Asn Arg
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 Ser Phe Cys His Glu Arg Leu Gly Gln Pro Ala Trp Ala Leu Ala Asp
 180 185 190
 Ala Gln Val Ala Leu Thr Leu Arg Pro Gly Trp Pro Arg Gly Leu Phe
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 Arg Leu Gly Lys Ala Leu Met Gly Leu Gln Arg Phe Arg Glu Ala Ala
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 Ala Val Phe Gln Glu Thr Leu Arg Gly Gly Ser Gln Pro Asp Ala Ala
 225 230 235 240
 Arg Glu Leu Arg Ser Cys Leu Leu His Leu Thr Leu Gln Gly Gln Arg
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<212> DNA

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<210> 4500

<211> 91

<212> PRT

<213> Homo sapiens

<400> 4500

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Lys | Val | Thr | Pro | Ala | His | Ser | Pro | Ala | Asp | Ala | Glu | Met | Gly | Ala | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| His | Gly | Leu | Ser | Pro | Leu | Asn | Val | Ile | Ala | Glu | Asp | Gly | Thr | Met | Thr |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ser | Leu | Cys | Gly | Asp | Trp | Leu | Gln | Gly | Leu | His | Arg | Phe | Val | Ala | Arg |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Lys | Ile | Met | Ser | Val | Leu | Ser | Glu | Arg | Gly | Leu | Phe | Arg | Gly | Leu |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
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<211> 1866

<212> DNA

<213> Homo sapiens

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<210> 4502

<211> 267

<212> PRT

<213> Homo sapiens

<400> 4502

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Arg | Met | Ala | Ala | Gln | Gly | Ala | Pro | Arg | Phe | Leu | Leu | Thr | Phe | Asp |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Asp | Glu | Thr | Ile | Val | Asp | Glu | Asn | Ser | Asp | Asp | Ser | Ile | Val | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Ala | Pro | Gly | Gln | Arg | Leu | Pro | Glu | Ser | Leu | Arg | Ala | Thr | Tyr | Arg |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Glu | Gly | Phe | Tyr | Asn | Glu | Tyr | Met | Gln | Arg | Val | Phe | Lys | Tyr | Leu | Gly |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|----|
| 65 | | | | | | 70 | | | | | 75 | | | | | | 80 |
| Glu | Gln | Gly | Val | Arg | Pro | Arg | Asp | Leu | Ser | Ala | Ile | Tyr | Glu | Ala | Ile | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Pro | Leu | Ser | Pro | Gly | Met | Ser | Asp | Leu | Leu | Gln | Phe | Val | Ala | Lys | Gln | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Gly | Ala | Cys | Phe | Glu | Val | Ile | Leu | Ile | Ser | Asp | Ala | Asn | Thr | Phe | Gly | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |
| Val | Glu | Ser | Ser | Leu | Arg | Ala | Ala | Gly | His | His | Ser | Leu | Phe | Arg | Arg | | |
| | | | | | | 135 | | | | | 140 | | | | | | |
| Ile | Leu | Ser | Asn | Pro | Ser | Gly | Pro | Asp | Ala | Arg | Gly | Leu | Leu | Ala | Leu | | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| Arg | Pro | Phe | His | Thr | His | Ser | Cys | Ala | Arg | Cys | Pro | Ala | Asn | Met | Cys | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Lys | His | Lys | Val | Leu | Ser | Asp | Tyr | Leu | Arg | Glu | Arg | Ala | His | Asp | Gly | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| Val | His | Phe | Glu | Arg | Leu | Phe | Tyr | Val | Gly | Asp | Gly | Ala | Asn | Asp | Phe | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Cys | Pro | Met | Gly | Leu | Leu | Ala | Gly | Gly | Asp | Val | Ala | Phe | Pro | Arg | Arg | | |
| | | 210 | | | | 215 | | | | | 220 | | | | | | |
| Gly | Tyr | Pro | Met | His | Arg | Leu | Ile | Gln | Glu | Ala | Gln | Lys | Ala | Glu | Pro | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Ser | Ser | Phe | Arg | Ala | Ser | Val | Val | Pro | Trp | Glu | Thr | Ala | Ala | Asp | Val | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Arg | Leu | His | Leu | Gln | Gln | Val | Leu | Lys | Ser | Cys | | | | | | | |
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<213> Homo sapiens
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660

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Glu | Phe | Arg | Pro | Leu | Asp | Glu | Arg | Ile | Asp | Glu | Phe | His | Pro | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ala | Thr | Arg | Thr | Leu | Phe | Ile | Gly | Asn | Leu | Glu | Lys | Thr | Thr | Thr | Tyr |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| His | Asp | Leu | Arg | Asn | Ile | Phe | Gln | Arg | Phe | Gly | Glu | Ile | Val | Asp | Ile |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Asp | Ile | Lys | Lys | Val | Asn | Gly | Val | Pro | Gln | Tyr | Ala | Phe | Leu | Gln | Tyr |

3699

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<212> DNA

<213> Homo sapiens

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<211> 244

<212> PRT

<213> Homo sapiens

<400> 4512

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| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Pro | Asp | Asp | Glu | Glu | Glu | Glu | Gln | Thr | Cys | Pro | Ser | Thr | Phe | Ser | |
| | | 20 | | | | | 25 | | | | | | 30 | | |
| Glu | Glu | Met | Thr | Pro | Thr | Ser | Val | Ile | Pro | Lys | Leu | Pro | Gln | Cys | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Arg | Glu | Glu | Glu | Glu | Lys | Glu | Ser | Asp | Ser | Asp | Ser | Glu | Gly | Pro | Ile |
| | | 50 | | | | 55 | | | | 60 | | | | | |
| Gln | Tyr | Arg | Asp | Glu | Glu | Asp | Glu | Asp | Glu | Ser | Tyr | Gln | Ser | Ala | Leu |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Ala | Asn | Lys | Val | Lys | Arg | Lys | Asp | Thr | Leu | Ala | Met | Lys | Leu | Asn | His |
| | | 85 | | | | | | 90 | | | | | | 95 | |
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| Lys | Glu | Glu | Trp | Asn | Glu | Ile | Arg | His | Gln | Ile | Gly | Asn | Thr | Leu | Ile |
| | | 115 | | | | 120 | | | | | | 125 | | | |
| Arg | Arg | Leu | Ser | Gln | Arg | Pro | Thr | Pro | Glu | Glu | Leu | Glu | Gln | Arg | Asn |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Ile | Leu | Gln | Pro | Lys | Asn | Glu | Ala | Asp | Arg | Gln | Ala | Glu | Lys | Arg | Glu |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Ile | Lys | Arg | Arg | Leu | Thr | Arg | Lys | Leu | Ser | Gln | Arg | Pro | Thr | Val | Ala |
| | | 165 | | | | | | 170 | | | | | | 175 | |
| Glu | Leu | Leu | Ala | Arg | Lys | Ile | Leu | Arg | Phe | Asn | Glu | Tyr | Val | Glu | Val |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Thr | Asp | Ala | Gln | Asp | Tyr | Asp | Arg | Arg | Ala | Asp | Lys | Pro | Trp | Thr | Lys |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| Leu | Thr | Pro | Ala | Asp | Lys | Ala | Ala | Ile | Arg | Lys | Glu | Leu | Asn | Glu | Phe |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Lys | Ser | Ser | Glu | Met | Glu | Val | His | Glu | Glu | Ser | Lys | His | Phe | Thr | Arg |
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<211> 545

<212> DNA

<213> Homo sapiens

<400> 4513

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<213> Homo sapiens

<400> 4514

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| Met | Val | Thr | Arg | Leu | Tyr | Asp | Gly | Met | Arg | Arg | Val | Asp | Leu | Thr | Gly |
| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Lys | Ala | Lys | Gly | Pro | Ser | Glu | Asn | Val | Ser | Gln | Glu | Gln | Phe | Thr | Ala |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Ser | Met | Ser | His | Leu | Leu | Lys | Gly | Asn | Ser | Glu | Glu | Lys | Ser | Leu | Met |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Ile | Met | Lys | Met | Ile | Ser | Ala | Thr | Glu | Gly | Pro | Val | Lys | Ala | Arg | Glu |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Val | Gln | Lys | Phe | Thr | Glu | Asp | Leu | Val | Gly | Ser | Val | Val | His | Val | Leu |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Ser | His | Arg | Gln | Glu | Leu | Arg | Gly | Trp | Thr | Gly | Lys | Glu | Ala | Pro | Gly |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Pro | Asn | Pro | Arg | Val | Gln | Val | Leu | Thr | Ala | Gln | Leu | Leu | Ser | Asp | Met |

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<211> 901

<212> PRT

<213> Homo sapiens

<400> 4516

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 85 90 95
 Pro Pro Gly Val Ala Ala Leu Leu Ala Phe Pro Glu Ala Arg Pro Glu
 100 105 110
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 130 135 140
 Phe His Leu Gln Leu His Trp Ala Ser Pro Leu Glu Thr Leu Leu Asp
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 180 185 190
 Ser Arg Ala Gly Arg Pro Pro Gln Leu Val Leu Asp Leu Ser Arg Arg
 195 200 205
 Asp Thr Gly Asp Ala Gly Leu Arg Ala Arg Leu Ala Pro Met Ala Ala
 210 215 220
 Pro Val Gly Gly Glu Ala Pro Val Pro Ala Ala Val Leu Leu Gly Cys
 225 230 235 240
 Asp Ile Ala Arg Ala Arg Arg Val Leu Glu Ala Val Pro Pro Gly Pro
 245 250 255
 His Trp Leu Leu Gly Thr Pro Leu Pro Pro Lys Ala Leu Pro Thr Ala
 260 265 270
 Gly Leu Pro Pro Gly Leu Leu Ala Leu Gly Glu Val Ala Arg Pro Pro
 275 280 285
 Leu Glu Ala Ala Ile His Asp Ile Val Gln Leu Val Ala Arg Ala Leu

| | | | | |
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| 305 | 310 | 315 | 320 | |
| Val Asn Cys Gly Asp Leu | Gln Pro Ala Gly Pro Glu Ser Pro Gly Arg | | | |
| | 325 | 330 | 335 | |
| Phe Leu Ala Arg Phe Leu | Ala Asn Thr Ser Phe Gln Gly Arg Thr Gly | | | |
| | 340 | 345 | 350 | |
| Pro Val Trp Val Thr Gly | Ser Ser Gln Val His Met Ser Arg His Phe | | | |
| | 355 | 360 | 365 | |
| Lys Val Trp Ser Leu Arg | Arg Asp Pro Arg Gly Ala Pro Ala Trp Ala | | | |
| | 370 | 375 | 380 | |
| Thr Val Gly Ser Trp Arg | Tyr Gly Gln Leu Asp Leu Glu Pro Gly Gly | | | |
| 385 | 390 | 395 | 400 | |
| Ala Ser Ala Trp Pro Pro | Pro Pro Gln Gly Ala Gln Val Arg Pro Lys | | | |
| | 405 | 410 | 415 | |
| Leu Arg Val Val Thr Leu | Leu Glu His Pro Phe Val Phe Ala Arg Asp | | | |
| | 420 | 425 | 430 | |
| Pro Asp Glu Asp Gly Gln | Cys Pro Ala Gly Gln Leu Cys Leu Asp Pro | | | |
| | 435 | 440 | 445 | |
| Gly Thr Asn Asp Ser Ala | Thr Leu Asp Ala Leu Phe Ala Ala Leu Ala | | | |
| | 450 | 455 | 460 | |
| Asn Gly Ser Ala Pro Arg | Ala Leu Arg Lys Cys Cys Tyr Gly Tyr Cys | | | |
| 465 | 470 | 475 | 480 | |
| Ile Asp Leu Leu Glu Arg | Leu Ala Glu Asp Thr Pro Phe Asp Phe Glu | | | |
| | 485 | 490 | 495 | |
| Leu Tyr Leu Val Gly Asp | Gly Lys Tyr Gly Ala Leu Arg Asp Gly Arg | | | |
| | 500 | 505 | 510 | |
| Trp Thr Gly Leu Val Gly | Asp Leu Leu Ala Gly Arg Ala His Met Ala | | | |
| | 515 | 520 | 525 | |
| Val Thr Ser Phe Ser Ile | Asn Ser Ala Arg Ser Gln Val Val Asp Phe | | | |
| | 530 | 535 | 540 | |
| Thr Ser Pro Phe Phe Ser | Thr Ser Leu Gly Ile Met Val Arg Ala Arg | | | |
| 545 | 550 | 555 | 560 | |
| Asp Thr Ala Ser Pro Ile | Gly Ala Phe Met Trp Pro Leu His Trp Ser | | | |
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| Thr Trp Leu Gly Val Phe | Ala Ala Leu His Leu Thr Ala Leu Phe Leu | | | |
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| Thr Val Tyr Glu Trp Arg | Ser Pro Tyr Gly Leu Thr Pro Arg Gly Arg | | | |
| | 595 | 600 | 605 | |
| Asn Arg Ser Thr Val Phe | Ser Tyr Ser Ser Ala Leu Asn Leu Cys Tyr | | | |
| | 610 | 615 | 620 | |
| Ala Ile Leu Phe Arg Arg | Thr Val Ser Ser Lys Thr Pro Lys Cys Pro | | | |
| 625 | 630 | 635 | 640 | |
| Thr Gly Arg Leu Leu Met | Asn Leu Trp Ala Ile Phe Cys Leu Leu Val | | | |
| | 645 | 650 | 655 | |
| Leu Ser Ser Tyr Thr Ala | Asn Leu Ala Ala Val Met Val Gly Asp Lys | | | |
| | 660 | 665 | 670 | |
| Thr Phe Glu Glu Leu Ser | Gly Ile His Asp Pro Lys Leu His His Pro | | | |
| | 675 | 680 | 685 | |
| Ala Gln Gly Phe Arg Phe | Gly Thr Val Trp Glu Ser Ala Glu Ala | | | |
| | 690 | 695 | 700 | |
| Tyr Ile Lys Lys Ser Phe | Pro Asp Met His Ala His Met Arg Arg His | | | |
| 705 | 710 | 715 | 720 | |
| Ser Ala Pro Thr Thr Pro | Arg Gly Val Ala Met Leu Thr Ser Asp Pro | | | |

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 Lys Gly Ser Arg Leu Gln Tyr Trp Leu His Thr Ser Gln Lys Ile His
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<211> 2275

<212> DNA

<213> Homo sapiens

<400> 4517

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<212> PRT

<213> Homo sapiens

<400> 4518

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<212> PRT

<213> Homo sapiens

<400> 4520

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| Thr | Arg | Ala | Val | Trp | Cys | Ala | His | Val | Glu | Gly | Trp | Thr | Thr | Leu | His |
| | | 20 | | | | | | 25 | | | | | 30 | | |
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| Lys | Val | Cys | Asp | Trp | His | Lys | Glu | Leu | Tyr | Asp | Trp | Arg | Leu | Gly | Pro |
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| Glu | Cys | Ile | Lys | Gly | Glu | Glu | Gly | Ile | Gln | Val | Arg | Glu | Ile | Ala | Cys |
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| Asn | Arg | Asn | Arg | Gln | Asn | Arg | Gln | Glu | Asn | Lys | Tyr | Trp | Asp | Ile | Gln |
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| Ile | Gly | Tyr | Gln | Thr | Arg | Glu | Val | Met | Cys | Ile | Asn | Lys | Thr | Gly | Lys |
| | | 260 | | | | | 265 | | | | | | 270 | | |
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<212> DNA

<213> Homo sapiens

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<211> 189

<212> PRT

<213> Homo sapiens

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| Arg | Glu | Gly | Ser | Tyr | Met | Ser | Ser | Pro | Pro | Pro | Pro | Pro | Pro | Pro | Gly |
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| His | Thr | Glu | Thr | Ala | Ser | Ser | Phe | Gln | Pro | Ser | Pro | Phe | Ser | Ala | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Phe | Glu | Leu | Gln | Ile | Ser | Leu | Leu | Tyr | Leu | Glu | Ser | Pro | Ile | Ser | Leu |
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| Gln | Glu | Phe | Ala | Leu | Ser | Phe | Ile | Ile | Ile | Leu | Val | Tyr | Val | Leu | Asp |
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| Trp | Ala | Ala | Ile | Thr | Arg | Cys | His | Arg | Leu | Ser | Gly | Leu | Asn | Asn | Lys |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| His | Ser | Tyr | Pro | Thr | Val | Thr | Glu | Ala | Glu | Lys | Pro | Gly | Val | Lys | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Pro | Ala | Trp | Ser | Asp | Ser | Val | Leu | Glu | Ala | Gly | Lys | Ser | Lys | Met | Glu |
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| Gly | Ala | Leu | Ser | Leu | His | Leu | Pro | Glu | Gly | Arg | Asn | Ala | Val | Ser | Leu |
| 145 | | | | 150 | | | | | 155 | | | | | | 160 |
| Gln | His | Arg | Arg | Asn | Thr | Ser | Glu | Lys | Lys | Ser | Ser | Arg | Lys | Val | Glu |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Asn | Lys | Glu | Met | Glu | Tyr | Ile | Tyr | Glu | Asn | Tyr | Tyr | Ile | | | |
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<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 4524

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 Tyr Leu Glu Tyr Lys Lys Ile Pro Asn Ser Asn Pro Pro Glu Tyr Glu
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<211> 1731

<212> DNA

<213> Homo sapiens

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720
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780
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1080
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1140
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1200
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1320
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1380
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1440
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1560
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1620
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1731

<210> 4526

<211> 344

<212> PRT

<213> Homo sapiens

<400> 4526

Xaa Asn His Gly Ile Leu Gln Ala Leu Thr Thr Glu Ala Tyr Glu Trp
 1 5 10 15
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 20 25 30
 Glu Ala Val Asp Thr Ile Gln Pro Glu Thr Gly Ser Gln Ala Ser Ser
 35 40 45
 Glu Gln Pro Gly Gln Leu Ile Ser Phe Ser Glu Ala Leu Gln His Phe
 50 55 60
 Gln Thr Val Asp Leu Ser Pro Phe Lys Lys Arg Ile Gln Pro Thr Ile
 65 70 75 80
 Arg Arg Thr Gly Leu Ala Ala Leu Arg His Tyr Leu Phe Gly Pro Pro
 85 90 95
 Lys Leu His Gln Arg Leu Arg Glu Glu Arg Asp Leu Val Leu Thr Ile
 100 105 110
 Ala Gln Cys Gly Leu Asp Ser Gln Asp Pro Val His Gly Arg Val Leu
 115 120 125
 Gln Thr Ile Tyr Lys Lys Leu Thr Gly Ser Lys Phe Asp Cys Ala Leu
 130 135 140
 His Gly Asn His Trp Glu Asp Leu Gly Phe Gln Gly Ala Asn Pro Ala
 145 150 155 160
 Thr Asp Leu Arg Gly Ala Gly Phe Leu Ala Leu Leu His Leu Leu Tyr
 165 170 175
 Leu Val Met Asp Ser Lys Thr Leu Pro Met Ala Gln Glu Ile Phe Arg
 180 185 190
 Leu Ser Arg His His Ile Gln Gln Phe Pro Phe Cys Leu Met Ser Val
 195 200 205
 Asn Ile Thr His Ile Ala Ile Gln Ala Leu Arg Glu Glu Cys Leu Ser
 210 215 220
 Arg Glu Cys Asn Arg Gln Gln Lys Val Ile Pro Val Val Asn Ser Phe
 225 230 235 240
 Tyr Ala Ala Thr Phe Leu His Leu Ala His Val Trp Arg Thr Gln Arg
 245 250 255
 Lys Thr Ile Ser Asp Ser Gly Phe Val Leu Lys Gly Val Leu Phe Leu
 260 265 270
 Leu Gly Arg Pro Arg Leu Asn Ala Gln Cys Pro Arg Ser Arg Glu Pro
 275 280 285
 Lys Val Val Ala Arg Leu Val Leu Ala Ala Val Leu Pro His Pro His
 290 295 300
 Phe Leu Lys Phe Gln Leu Thr Lys Ile Ser Ile Thr His Pro Leu Glu
 305 310 315 320
 Ser Ala Ser Ser Pro Phe Ser Ala Leu Thr Val Ala Leu Phe Trp Ser
 325 330 335
 Tyr Thr Tyr Asp Lys His Ile Phe
 340

<210> 4527

<211> 885

<212> DNA

<213> Homo sapiens

<400> 4527

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 120
 ctgcccaccc agccttggct ctgggctgcc atgtcccccac gggggcagga gagaggcaca
 180
 agtcacagtc aggcaaggga gcctcagcgt cctgggcggt ggctgttggg gtccctccag
 240
 tcttcacctg ggaccctcgg ccaggctggg acagcatcca ggaggcgagg ctgcatggtc
 300
 cagcgggtggg tgcaggtggc aacaggctcg cgggctgtgc aggttccaaa aggagctctc
 360
 gggttggcac tgggtgagac cagccccggg gccagcaggg gaatgagcgg tggagcaggg
 420
 gggtgctggg cactgggggtg ggccccatct cctgtccttc cctcatggct gctggaaggg
 480
 ccgcctccct ggctcagcat catctcagat tccgggactc aaacaccgtc tcctcgtcgc
 540
 tgtccagcga ggccatctcc gtggggctct cagtgttggc gaggaggccg tatcgcctcc
 600
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 660
 agcccaggat cacgtagaag gagcgcggtc gcgcccagcc cgacgccccg ggcggacgcg
 720
 tgtgcgtgct gttgtgtggc gcgcccggct ggctcccggt cgtcacggcc ggcggcggcg
 780
 acaacgtgac ctggcggggg cagcggcgag cctcttcggc accgcacggc agcgccgcca
 840
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 885

<210> 4528

<211> 206

<212> PRT

<213> Homo sapiens

<400> 4528

Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe
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 Cys Arg Asp Met Ala Ala Phe Ile Val Pro Ser Pro Ala Arg Arg Cys
 20 25 30
 Ser Gln Lys Gly Ser Leu Gly His Leu Pro Thr Gln Pro Trp Leu Trp
 35 40 45
 Ala Ala Met Ser Pro Arg Gly Gln Glu Arg Gly Thr Ser His Ser Gln
 50 55 60
 Ala Arg Glu Pro Gln Arg Pro Gly Arg Trp Leu Leu Gly Ser Leu Gln
 65 70 75 80
 Ser Ser Pro Gly Thr Leu Gly Gln Ala Gly Thr Ala Ser Arg Arg Arg
 85 90 95
 Gly Cys Met Val Gln Arg Trp Val Gln Val Ala Thr Gly Arg Arg Ala
 100 105 110
 Val Gln Val Pro Lys Gly Ala Leu Gly Leu Ala Leu Gly Glu Thr Ser
 115 120 125
 Pro Gly Ala Ser Arg Gly Met Ser Gly Gly Ala Gly Gly Cys Trp Ala
 130 135 140
 Leu Gly Trp Ala Pro Ser Pro Val Leu Pro Ser Trp Leu Leu Glu Gly

```

145          150          155          160
Pro Pro Pro Trp Leu Ser Ile Ile Ser Asp Ser Gly Thr Gln Thr Pro
          165          170          175
Ser Pro Arg Arg Cys Pro Ala Arg Pro Ser Pro Trp Gly Pro Gln Cys
          180          185          190
Trp Arg Gly Gly Arg Ile Ala Ser Ala Glu Ala Ser Ser Thr
          195          200          205

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<210> 4529

<211> 546

<212> DNA

<213> Homo sapiens

<400> 4529

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gtggccgccc cctaagctgc agccgccgga gccgcagaaa caagaggccg agccgtgtcg
120
aagatggagg agaaaccctc agggcccatc ccggacatgc tggccactgc agagcccagc
180
tccagtgaga ccgacaagga ggtgtgtgcc ccggctgtgc cagctgcagc cccctctctc
240
tccatgtcgg aggagccagg ccctgagcag gcagccacac cgccagtggg gaacgtggag
300
gggctggagg gatgcagcag ggctcctccc cagccccaga cagctgccag tctggccccg
360
gaccagccc tggcctgacc agcatagtct ccgggaccag cgaggacctg cggcctccca
420
gacgacgccc acctccaggg aagcaaatcc cttgtccag ccctggctgc tgcctcagtt
480
ttcccagcgt ccgtgacctg gcacagcatc tgcgaaccca ctgcccgccg agccctatgc
540
agtctc
546

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<210> 4530

<211> 84

<212> PRT

<213> Homo sapiens

<400> 4530

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Met Glu Glu Lys Pro Ser Gly Pro Ile Pro Asp Met Leu Ala Thr Ala
1          5          10          15
Glu Pro Ser Ser Ser Glu Thr Asp Lys Glu Val Leu Ser Pro Ala Val
20          25          30
Pro Ala Ala Ala Pro Ser Ser Ser Met Ser Glu Glu Pro Gly Pro Glu
35          40          45
Gln Ala Ala Thr Pro Pro Val Gly Asn Val Glu Gly Leu Glu Gly Cys
50          55          60
Ser Arg Ala Pro Pro Gln Pro Gln Thr Ala Ala Ser Leu Ala Pro Asp
65          70          75          80
Pro Ala Leu Ala

```


<210> 4531
<211> 1414
<212> DNA
<213> Homo sapiens

<400> 4531
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gccgggtccct tgcagggcgg tggggcccgg gccctggacc tactccgggg cctgccgcgt
120
gtgagcctgg ccaacttaaa gccgaatccc ggctccaaga aaccggagag aagaccaaga
180
ggtcggagaa gaggtagaaa atgtggcaga ggccataaag gagaaaggca aagaggaacc
240
cgcccccgct tgggctttga gggaggccag actccatttt acatccgaat cccaaaatac
300
gggttttaacg aaggacatag tttcagacgc cagtataagc ctttgagtct caatagactg
360
cagtatctta ttgatttggg tcgtgttgat cctagtcaac ctattgactt aaccagctt
420
gtcaatggga gaggtgtgac catccagcca cttaaagggt attatgggtg ccagctgggt
480
gaggaggggtg ctgacacctt tacggcaaaa gttaatatg aagtacagt ggcttcagaa
540
ctagctattg ctgccattga aaaaaatgggt ggtgttggtta ctacagcctt ctatgatcca
600
agaagtcttg acattgtatg caaacctggt ccattctttc ttcgtggaca acccattcca
660
aaaagaatgc ttccaccaga agaactggta ccatattaca ctgatgcaaa gaaccgtggg
720
tacctggcgg atcctgcaa atttcttgaa gcacgacttg aactcgccag gaagtatggt
780
tatatcttac ctgatatcac taaagatgaa ctcttcaaaa tgctctgtac taggaaggat
840
ccaaggcaga ttttcttttg tcttgctcca ggatgggtgg tgaatatggc cgataagaaa
900
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960
ggaagcagag ttgttaaaga gtactggaat aggggctgaa ggatctatat tcccttattg
1020
cattttcctt atgtataatt ttccagatgg tgatgttact tttcagtga ctcatatgtc
1080
tcattttcat ctaaaattaa atggcaggaa acaaggactg catagagaaa ctgagtctgt
1140
gtgggttctg tctcaaagat acaaactccc tgatagtcta tggaaggaaa atgacaacta
1200
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1260
acagatcaga atgaaatgca caagtggaat gggattgacc tgtaggcctg ctctgccgag
1320
atgagagcag atggaatgag ttggtgaccc ctcttaatct gtagcctcag ggaaacacgg
1380
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1414

<210> 4532
 <211> 296
 <212> PRT
 <213> Homo sapiens

<400> 4532
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 Arg Gly Leu Pro Arg Val Ser Leu Ala Asn Leu Lys Pro Asn Pro Gly
 20 25 30
 Ser Lys Lys Pro Glu Arg Arg Pro Arg Gly Arg Arg Arg Gly Arg Lys
 35 40 45
 Cys Gly Arg Gly His Lys Gly Glu Arg Gln Arg Gly Thr Arg Pro Arg
 50 55 60
 Leu Gly Phe Glu Gly Gly Gln Thr Pro Phe Tyr Ile Arg Ile Pro Lys
 65 70 75 80
 Tyr Gly Phe Asn Glu Gly His Ser Phe Arg Arg Gln Tyr Lys Pro Leu
 85 90 95
 Ser Leu Asn Arg Leu Gln Tyr Leu Ile Asp Leu Gly Arg Val Asp Pro
 100 105 110
 Ser Gln Pro Ile Asp Leu Thr Gln Leu Val Asn Gly Arg Gly Val Thr
 115 120 125
 Ile Gln Pro Leu Lys Arg Asp Tyr Gly Val Gln Leu Val Glu Glu Gly
 130 135 140
 Ala Asp Thr Phe Thr Ala Lys Val Asn Ile Glu Val Gln Leu Ala Ser
 145 150 155 160
 Glu Leu Ala Ile Ala Ala Ile Glu Lys Asn Gly Gly Val Val Thr Thr
 165 170 175
 Ala Phe Tyr Asp Pro Arg Ser Leu Asp Ile Val Cys Lys Pro Val Pro
 180 185 190
 Phe Phe Leu Arg Gly Gln Pro Ile Pro Lys Arg Met Leu Pro Pro Glu
 195 200 205
 Glu Leu Val Pro Tyr Tyr Thr Asp Ala Lys Asn Arg Gly Tyr Leu Ala
 210 215 220
 Asp Pro Ala Lys Phe Pro Glu Ala Arg Leu Glu Leu Ala Arg Lys Tyr
 225 230 235 240
 Gly Tyr Ile Leu Pro Asp Ile Thr Lys Asp Glu Leu Phe Lys Met Leu
 245 250 255
 Cys Thr Arg Lys Asp Pro Arg Gln Ile Phe Phe Gly Leu Ala Pro Gly
 260 265 270
 Trp Val Val Asn Met Ala Asp Lys Lys Ile Leu Lys Pro Thr Asp Glu
 275 280 285
 Asn Leu Leu Lys Tyr Tyr Thr Ser
 290 295

<210> 4533
 <211> 968
 <212> DNA
 <213> Homo sapiens

<400> 4533
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tttgcacacg tgtgccctg tccggacgcc ggggctgagg ccgatcggt cgggcagcgg
 120
 gcgcggcggc cccgcgcagc catggactgg ctcatgggga agtccaaagc caagcccaat
 180
 ggcaagaagc ccgctgcgga ggagaggaag gcctacctgg agcctgagca caccaaggcc
 240
 aggatcaccg acttccagtt caaggagctg gtggtgctgc cccgggagat cgacctcaac
 300
 gagtggctgg ccagcaacac aacaacattt ttccaccaca tcaacctgca gtatagcaca
 360
 atctcggagt tctgcacagg agagacgtgt cagacgatgg ccgtgtgcaa cacacgtac
 420
 tactggtatg acgagcgggg gaagaaggtc aagtgcacgg cccacagta cgttgacttc
 480
 gtcctgagct ccgtgcagaa gctgggtgacg gatgaggacg tgttccccac aaaatacggc
 540
 agagaattcc ccagtcctt tgagtccctg gtgaggaaga tctgcagaca cctgttccac
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 660
 cacttgaaca cgctctacgt ccacttcac cttttgtc gggagttcaa cctgctggag
 720
 ccaaagaga ccgccatcat ggacgacctc accgaggtgc tatgcagcgg ggccggcggg
 780
 gtccacagtg ggggcagtgg ggatggggcc ggcagcgggg gcccgggagc acagaaccac
 840
 gtgaaggaga gatgagcccc ccgggccgga caggggcaca cgtgtgcaaa gagacggtgg
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 960
 acacgcgt
 968

<210> 4534

<211> 284

<212> PRT

<213> Homo sapiens

<400> 4534

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Ala | Gln | His | Met | Cys | Ala | His | Ala | Asp | Ala | Gly | Glu | Asn | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| His | His | Arg | Leu | Phe | Ala | His | Val | Cys | Pro | Cys | Pro | Asp | Ala | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Ala | Asp | Arg | Val | Gly | Gln | Arg | Ala | Arg | Arg | Pro | Arg | Ala | Ala | Met |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Trp | Leu | Met | Gly | Lys | Ser | Lys | Ala | Lys | Pro | Asn | Gly | Lys | Lys | Pro |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Ala | Ala | Glu | Glu | Arg | Lys | Ala | Tyr | Leu | Glu | Pro | Glu | His | Thr | Lys | Ala |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Arg | Ile | Thr | Asp | Phe | Gln | Phe | Lys | Glu | Leu | Val | Val | Leu | Pro | Arg | Glu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Ile | Asp | Leu | Asn | Glu | Trp | Leu | Ala | Ser | Asn | Thr | Thr | Thr | Phe | Phe | His |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| His | Ile | Asn | Leu | Gln | Tyr | Ser | Thr | Ile | Ser | Glu | Phe | Cys | Thr | Gly | Glu |

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<210> 4535
<211> 473
<212> DNA
<213> Homo sapiens
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<210> 4536
<211> 75
<212> PRT
<213> Homo sapiens
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3730

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<210> 4537
<211> 2811
<212> DNA
<213> Homo sapiens
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3731

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1320
agaggcgagg aggtagtggg tgaggctacc tgactcactt caaatgcatg ttttgagatg
1380
tttgagatt cagcaattct gtcttcattg ctccaggatc tggatactg ttctcataaa
1440
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1500
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1560
tatttgccag gggcacgatg tgacatatct gcagtcccag cacagtggga caaaaagaat
1620
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1680
tgaacattca tcgatggctt ccatgtattc atttattcac ttgttcattc aagtatttat
1740
tgaataacctg cctcaagcta gagagaaaag agagtgcgct ttggaaattt attccagttt
1800
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1860
tgtttgattc agagatggct gaatttctat tcttagctta ttgtgactgt ttcagatcta
1920
gtttgggaac agattagagg ccattgtctt ctgtcctgat cagggtggcct ggctgtttct
1980
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2160
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2220
caagacactt cactactcca ggtctcactt tccccatctg taaaacaggg tttggactag
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2340
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2400
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2460
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2520
ttttttaacg caaccttttc ccttttttcc taccacacag ctctgttcca tgtaagttgc
2580
caacagtttc actgaacagt ggggtatgtg atgggttttg catgacatct tcagtatgag
2640
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2700
agtgggtgta tcatgaacca aaggaattta tgttttgtaa cttgggtact ttattttgca
2760
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2811

<210> 4538
 <211> 437
 <212> PRT
 <213> Homo sapiens

<400> 4538
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 Ser Ala Leu Ala Phe Tyr Leu Ala Lys Thr Thr Glu Ala Glu
 20 25 30
 Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro Leu
 35 40 45
 Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu Ser
 50 55 60
 Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln Ala
 65 70 75 80
 Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser
 85 90 95
 Asp Thr Ala Leu Glu Glu Xaa Ser Ser Arg Gly Ala Arg Pro Ser Thr
 100 105 110
 His Arg Ala Glu Thr Leu Pro Ser Leu Xaa His Val Ser Val Glu Leu
 115 120 125
 Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
 130 135 140
 Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
 145 150 155 160
 Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
 165 170 175
 Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
 180 185 190
 Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
 195 200 205
 Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
 210 215 220
 Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
 225 230 235 240
 Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
 245 250 255
 Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
 260 265 270
 Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
 275 280 285
 His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
 290 295 300
 Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
 305 310 315 320
 His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu
 325 330 335
 Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
 340 345 350
 Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
 355 360 365
 Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln

370 375 380
 Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
 385 390 395 400
 Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
 405 410 415
 Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
 420 425 430
 Ser Leu Ser Lys Lys
 435

<210> 4539

<211> 331

<212> DNA

<213> Homo sapiens

<400> 4539

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 120
 tcacctggaa actccagcaa gagcagaggc aggtggagga gctgaggatg cagcttcaga
 180
 agcagaaaag gaataactgt tcagagaaga agccgctgcc tttcctggct gcctccatca
 240
 agcaagaaga ggctgtctcc agctgtcctt ttgcatccca agtacctgtg aaaagacaaa
 300
 gcagcagctc aaagtgtcac ccaccggctt g
 331

<210> 4540

<211> 99

<212> PRT

<213> Homo sapiens

<400> 4540

Met Gly Ala Leu Phe Leu Leu Ser Trp Met Gly Trp Thr Pro Arg Lys
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 Thr Arg Ser Leu Gly Glu Asn Gln Arg Val Ile Asn Glu Leu Thr Trp
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 Lys Leu Gln Gln Glu Gln Arg Gln Val Glu Glu Leu Arg Met Gln Leu
 35 40 45
 Gln Lys Gln Lys Arg Asn Asn Cys Ser Glu Lys Lys Pro Leu Pro Phe
 50 55 60
 Leu Ala Ala Ser Ile Lys Gln Glu Glu Ala Val Ser Ser Cys Pro Phe
 65 70 75 80
 Ala Ser Gln Val Pro Val Lys Arg Gln Ser Ser Ser Ser Lys Cys His
 85 90 95
 Pro Pro Ala

<210> 4541

<211> 452

<212> DNA

<213> Homo sapiens

<400> 4541
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 120
 tccagtctga gaaccataaa aaatcttcac tccagacaca aagatgtctt tctcttgaag
 180
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<400> 4542
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 Leu Gln Glu Lys Ser Val Pro Lys Ala Ala Gln Asp Leu Met Thr Asn
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 Gly Tyr Val Ser Leu Gln Glu Lys Asp Ile Phe Val Ser Gly Val Lys
 65 70 75 80
 Ile Phe Tyr Gly Ser Gln Thr Gly Thr Ala Lys Gly Phe Ala Thr Val
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<211> 150

<212> PRT

<213> Homo sapiens

<400> 4544

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| Gln | Ser | Glu | Pro | Ser | Ala | Leu | Pro | Gly | Leu | Asp | Leu | Phe | Leu | Asn | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| His | Lys | Leu | Gln | Gly | Ala | Ala | Ala | Val | Ser | Leu | Ala | Arg | His | Trp | Pro |
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| Ile | Thr | Ser | Asn | Arg | Leu | Gly | Arg | Ala | Pro | Val | Glu | Ser | Pro | Val | Pro |
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| Pro | Asp | Lys | Gln | Ser | His | Ser | Gly | Val | Val | Arg | Pro | Gly | Arg | Val | Ser |
| | | | 85 | | | | | | 90 | | | | 95 | | |
| Pro | Val | Gly | Gly | Arg | Gly | Ala | Leu | Ala | Arg | Arg | Val | Ser | Gly | Glu | Ala |
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| Lys | Cys | Lys | Ala | Leu | Val | Arg | Gly | Ala | Ser | Gly | Ser | His | Gly | Gly | Ala |
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| Ala | Gly | Gln | Gly | Pro | Ala | Val | Thr | Arg | Ser | Pro | Ser | Ser | Leu | Cys | Leu |
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<210> 4545

<211> 3568

<212> DNA

<213> Homo sapiens

<400> 4545

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<210> 4546

<211> 380

<212> PRT

<213> Homo sapiens

<400> 4546

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 35 40 45
 Gly Thr Arg Gly Val Val Ala Leu Gln Thr Leu Arg Lys Leu Val Glu
 50 55 60
 Leu Thr Gln Lys Pro Val His Gln Leu Phe Asp Tyr Ile Cys Gly Val
 65 70 75 80
 Ser Thr Gly Ala Ile Leu Ala Phe Met Leu Gly Leu Phe His Met Pro
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 Leu Asp Glu Cys Glu Glu Leu Tyr Arg Lys Leu Gly Ser Asp Val Phe
 100 105 110
 Ser Gln Asn Val Ile Val Gly Thr Val Lys Met Ser Trp Ser His Ala
 115 120 125
 Phe Tyr Asp Ser Gln Thr Trp Glu Asn Ile Leu Lys Asp Arg Met Gly
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 Ser Ala Leu Met Ile Glu Thr Ala Arg Asn Pro Thr Cys Pro Lys Val
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 Ala Ala Val Ser Thr Ile Val Asn Arg Gly Ile Thr Pro Lys Ala Phe
 165 170 175
 Val Phe Arg Asn Tyr Gly His Phe Pro Gly Ile Asn Ser His Tyr Leu
 180 185 190
 Gly Gly Cys Gln Tyr Lys Met Trp Gln Ala Ile Arg Ala Ser Ser Ala
 195 200 205
 Ala Pro Gly Tyr Phe Ala Glu Tyr Ala Leu Gly Asn Asp Leu His Gln
 210 215 220
 Asp Gly Gly Leu Leu Leu Asn Asn Pro Ser Ala Leu Ala Met His Glu
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 Cys Lys Cys Leu Trp Pro Asp Val Pro Leu Glu Cys Ile Val Ser Leu
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<210> 4548

<211> 515

<212> PRT

<213> Homo sapiens

<400> 4548

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 Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr Ser

3742

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| Pro | Ser | Gly | Gly | Ser | Ser | Lys | Lys | Pro | Ala | Thr | Ser | Ala | Arg | Lys | Glu |
| | | 485 | | 490 | | 495 | | | | | | | | | |
| Val | Lys | Leu | Pro | Gly | Lys | Gly | Lys | Ser | Thr | Met | Lys | Lys | Ser | Phe | Arg |
| | | 500 | | 505 | | 510 | | | | | | | | | |
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<210> 4549

<211> 2927

<212> DNA

<213> Homo sapiens

<400> 4549

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<210> 4550

<211> 908

<212> PRT

<213> Homo sapiens

<400> 4550

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| Asp | Leu | Cys | Val | Gly | Asp | Val | Val | Cys | Leu | Arg | Lys | Asp | Asn | Ile | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Ala | Asp | Met | Leu | Leu | Leu | Ala | Ser | Thr | Glu | Pro | Ser | Ser | Leu | Cys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
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| Gln | Ala | Leu | Met | Val | Thr | His | Lys | Glu | Leu | Ala | Thr | Ile | Lys | Lys | Met |
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| Ala | Ser | Phe | Gln | Gly | Thr | Val | Thr | Cys | Glu | Ala | Pro | Asn | Ser | Arg | Met |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| His | His | Phe | Val | Gly | Cys | Leu | Glu | Trp | Asn | Asp | Lys | Lys | Tyr | Ser | Leu |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Ile | Gly | Asn | Leu | Leu | Leu | Arg | Gly | Cys | Arg | Ile | Arg | Asn | Thr | Asp |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Thr | Cys | Tyr | Gly | Leu | Val | Ile | Tyr | Ala | Asp | Gly | Tyr | Met | Phe | Val | Gly |
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| Phe | Asp | Thr | Lys | Ile | Met | Lys | Asn | Cys | Gly | Lys | Ile | His | Leu | Lys | Arg |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Thr | Lys | Leu | Asp | Leu | Leu | Met | Asn | Lys | Leu | Val | Val | Val | Ile | Phe | Ile |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Ser | Val | Val | Leu | Val | Cys | Leu | Val | Leu | Ala | Phe | Gly | Phe | Gly | Phe | Ser |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Val | Lys | Glu | Phe | Lys | Asp | His | His | Tyr | Tyr | Leu | Ser | Gly | Val | His | Gly |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ser | Ser | Val | Ala | Ala | Glu | Ser | Phe | Phe | Val | Phe | Trp | Ser | Phe | Leu | Ile |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Leu | Leu | Ser | Val | Thr | Ile | Pro | Met | Ser | Met | Phe | Ile | Leu | Ser | Glu | Phe |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Ile | Tyr | Leu | Gly | Asn | Ser | Val | Phe | Ile | Asp | Trp | Asp | Val | Gln | Met | Tyr |
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| Tyr | Lys | Pro | Gln | Asp | Val | Pro | Ala | Lys | Ala | Arg | Ser | Thr | Ser | Leu | Asn |
| | | | 245 | | | | | 250 | | | | | 255 | | |
| Asp | His | Leu | Gly | Gln | Val | Glu | Tyr | Ile | Phe | Ser | Asp | Lys | Thr | Gly | Thr |
| | | 260 | | | | | | 265 | | | | | 270 | | |
| Leu | Thr | Gln | Asn | Ile | Leu | Thr | Phe | Asn | Lys | Cys | Cys | Ile | Ser | Gly | Arg |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Val | Tyr | Gly | Glu | Pro | Leu | Pro | Leu | Glu | Gln | Val | Arg | Arg | Arg | Glu | Ala |
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| Ala | Leu | Pro | Gln | Cys | Gly | Pro | Ala | Ala | Pro | Arg | Ala | Asp | Gln | Arg | Gly |
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| Arg | Gly | Arg | Ala | Gly | Val | Leu | Ala | Pro | Ala | Gly | His | Leu | Pro | His | Gly |
| | | | 325 | | | | | 330 | | | | | 335 | | |
| Asp | Asp | Gln | Leu | Leu | Tyr | Gln | Ala | Ala | Ser | Pro | Asp | Glu | Gly | Ala | Leu |

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 Val Thr Ala Ala Arg Asn Phe Gly Tyr Val Phe Leu Ser Arg Thr Gln
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 Val Arg Lys Pro Glu Gly Ala Ile Cys Leu Tyr Thr Lys Gly Ala Asp
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 420 425 430
 Thr Glu Glu Ala Leu Ala Ala Phe Ala Gln Glu Thr Leu Arg Thr Leu
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 Cys Leu Ala Tyr Arg Glu Val Ala Glu Asp Ile Tyr Glu Asp Trp Gln
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 Gln Arg His Gln Glu Ala Ser Leu Leu Leu Gln Asn Arg Ala Gln Ala
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 Leu Gln Gln Val Tyr Asn Glu Met Glu Gln Asp Leu Arg Leu Leu Gly
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 Ala Thr Ala Ile Glu Asp Arg Leu Gln Asp Gly Val Pro Glu Thr Ile
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 Lys Cys Leu Lys Lys Ser Asn Ile Lys Ile Trp Val Leu Thr Gly Asp
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 Lys Gln Glu Thr Ala Val Asn Ile Gly Phe Ala Cys Glu Leu Leu Ser
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 Glu Asn Met Leu Ile Leu Glu Glu Lys Glu Ile Ser Arg Ile Leu Glu
 545 550 555 560
 Thr Tyr Trp Glu Asn Ser Asn Asn Leu Leu Thr Arg Glu Ser Leu Ser
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 Gln Val Lys Leu Ala Leu Val Ile Asn Gly Asp Phe Leu Asp Lys Leu
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 Leu Val Ser Leu Arg Lys Glu Pro Arg Ala Leu Ala Gln Asn Val Asn
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 660 665 670
 Ile Cys Cys Arg Val Thr Pro Lys Gln Lys Ala Leu Ile Val Ala Leu
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 Val Lys Lys Tyr His Gln Val Val Thr Leu Ala Ile Gly Asp Gly Ala
 690 695 700
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 705 710 715 720
 Gly Gln Glu Gly Met Gln Ala Val Gln Asn Ser Asp Phe Val Leu Gly
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 Gln Phe Cys Phe Leu Gln Arg Leu Leu Val His Gly Arg Trp Ser
 740 745 750
 Tyr Val Arg Ile Cys Lys Phe Leu Arg Tyr Phe Phe Tyr Lys Ser Met
 755 760 765
 Ala Ser Met Met Val Gln Val Trp Phe Ala Cys Tyr Asn Gly Phe Thr

| | | |
|---|-----|-----|
| 770 | 775 | 780 |
| Gly Gln Asp Val Ser Ala Glu Gln Ser Leu Glu Lys Pro Glu Leu Tyr | | |
| 785 | 790 | 795 |
| Val Val Gly Gln Lys Asp Glu Leu Phe Asn Tyr Trp Val Phe Val Gln | | 800 |
| | 805 | 810 |
| Ala Ile Ala His Gly Val Thr Thr Ser Leu Val Asn Phe Phe Met Thr | | 815 |
| | 820 | 825 |
| Leu Trp Ile Ser Arg Asp Thr Ala Gly Pro Ala Ser Phe Ser Asp His | | 830 |
| | 835 | 840 |
| Gln Ser Phe Ala Val Val Val Ala Leu Ser Cys Leu Leu Ser Ile Thr | | 845 |
| | 850 | 855 |
| Met Glu Val Ile Leu Ile Ile Lys Tyr Trp Thr Ala Leu Cys Val Ala | | 860 |
| 865 | 870 | 875 |
| Thr Ile Leu Leu Ser Leu Gly Phe Tyr Ala Ile Met Thr Thr Thr Thr | | 880 |
| | 885 | 890 |
| Gln Ser Phe Trp Leu Phe Arg Met Pro Thr Ser Ala | | 895 |
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<210> 4551

<211> 361

<212> DNA

<213> Homo sapiens

<400> 4551

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120

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180

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240

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360

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361

<210> 4552

<211> 100

<212> PRT

<213> Homo sapiens

<400> 4552

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Ser Ala Ala His Cys Pro Val Pro Gly Ile Ser Glu Gly Pro Arg Thr
35 40 45

Cys Ser Gln Gln Gly Arg Gln Gly Arg Ala Pro Arg Arg Asp Pro Thr
50 55 60

Gln Arg Thr Trp Glu Ser Gly Cys Gln Arg Trp Ala Ala Gly Arg Ala

| | | | | | | | | | | | | | | | |
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| 65 | | 70 | | 75 | | 80 | | | | | | | | | |
| Pro | Ala | Lys | Gln | Ser | Leu | Cys | Gly | Val | Pro | His | Ala | Ala | Glu | Val | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Val | Arg | Cys | Trp | | | | | | | | | | | | |
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<211> 2970

<212> DNA

<213> Homo sapiens

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 1260

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<210> 4554

<211> 705

<212> PRT

<213> Homo sapiens

<400> 4554

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| Met | Pro | Leu | Arg | Ile | His | Val | Leu | Leu | Gly | Leu | Ala | Ile | Thr | Thr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Gln | Ala | Val | Asp | Lys | Lys | Val | Asp | Cys | Pro | Arg | Leu | Cys | Thr | Cys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Ile | Arg | Pro | Trp | Phe | Thr | Pro | Arg | Ser | Ile | Tyr | Met | Glu | Ala | Ser |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Thr | Val | Asp | Cys | Asn | Asp | Leu | Gly | Leu | Leu | Thr | Phe | Pro | Ala | Arg | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Pro | Ala | Asn | Thr | Gln | Ile | Leu | Leu | Leu | Gln | Thr | Asn | Asn | Ile | Ala | Lys |
| 65 | | | | 70 | | | | | 75 | | | | | | 80 |
| Ile | Glu | Tyr | Ser | Thr | Asp | Phe | Pro | Val | Asn | Leu | Thr | Gly | Leu | Asp | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ser | Gln | Asn | Asn | Leu | Ser | Ser | Val | Thr | Asn | Ile | Asn | Val | Lys | Lys | Met |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Pro | Gln | Leu | Leu | Ser | Val | Tyr | Leu | Glu | Glu | Asn | Lys | Leu | Thr | Glu | Leu |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Pro | Glu | Lys | Cys | Leu | Ser | Glu | Leu | Ser | Asn | Leu | Gln | Glu | Leu | Tyr | Ile |
| | | | | | | | 135 | | | | 140 | | | | |
| Asn | His | Asn | Leu | Leu | Ser | Thr | Ile | Ser | Pro | Gly | Ala | Phe | Ile | Gly | Leu |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| His | Asn | Leu | Leu | Arg | Leu | His | Leu | Asn | Ser | Asn | Arg | Leu | Gln | Met | Ile |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Asn | Ser | Lys | Trp | Phe | Asp | Ala | Leu | Pro | Asn | Leu | Glu | Ile | Leu | Met | Ile |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Glu | Asn | Pro | Ile | Ile | Arg | Ile | Lys | Asp | Met | Asn | Phe | Lys | Pro | Leu |
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| Ile | Asn | Leu | Arg | Ser | Leu | Val | Ile | Ala | Gly | Ile | Asn | Leu | Thr | Glu | Ile |
| | 210 | | | | | 215 | | | | | 220 | | | | |
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| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Asp | Asn | Arg | Leu | Ile | Lys | Val | Pro | His | Val | Ala | Leu | Gln | Lys | Val |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Asn | Leu | Lys | Phe | Leu | Asp | Leu | Asn | Lys | Asn | Pro | Ile | Asn | Arg | Ile |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Arg | Arg | Gly | Asp | Phe | Ser | Asn | Met | Leu | His | Leu | Lys | Glu | Leu | Gly | Ile |
| | | | 275 | | | | 280 | | | | | 285 | | | |
| Asn | Asn | Met | Pro | Glu | Leu | Ile | Ser | Ile | Asp | Ser | Leu | Ala | Val | Asp | Asn |
| | | 290 | | | | 295 | | | | | 300 | | | | |
| Leu | Pro | Asp | Leu | Arg | Lys | Ile | Glu | Ala | Thr | Asn | Asn | Pro | Arg | Leu | Ser |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Tyr | Ile | His | Pro | Asn | Ala | Phe | Phe | Arg | Leu | Pro | Lys | Leu | Glu | Ser | Leu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Met | Leu | Asn | Ser | Asn | Ala | Leu | Ser | Ala | Leu | Tyr | His | Gly | Thr | Ile | Glu |

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 Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg
 370 375 380
 Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln
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 Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys
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 Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu
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 Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln
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 Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn
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 465 470 475 480
 Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr
 485 490 495
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 Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile
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 Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser
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 Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr
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 610 615 620
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 660 665 670
 Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser
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<210> 4555

<211> 1128

<212> DNA

<213> Homo sapiens

<400> 4555

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<211> 67

<212> PRT

<213> Homo sapiens

<400> 4556

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| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Leu | Asp | Thr | Pro | Gly | Val | Leu | Ala | Pro | Arg | Ile | Glu | Ser | Val | Glu | Thr |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gly | Leu | Lys | Leu | Ala | Leu | Cys | Gly | Thr | Val | Leu | Asp | His | Leu | Val | Gly |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Glu | Glu | Thr | Met | Ala | Asp | Tyr | Leu | Leu | Tyr | Thr | Leu | Asn | Lys | His | Gln |
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<211> 446

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<213> Homo sapiens

<400> 4557

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<210> 4558

<211> 148

<212> PRT

<213> Homo sapiens

<400> 4558

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35           40           45
Glu Thr Ser Arg Ala Phe Leu Pro Pro Pro Ser Asp Val Arg Val Arg
50           55           60
Ser Cys Leu Tyr His Trp Ser Ala Thr Ala His Leu Pro Pro Leu Ser
65           70           75           80
Lys Lys Pro Pro Cys Thr Ile Ser His Leu Arg Pro Leu Leu Gly Leu
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Pro Pro Pro Ser Asp Leu His Ile Pro Ser Ala Ala Thr Leu Gly Pro
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Cys Met His Trp Pro Pro Pro Ser Asp Ala Pro Cys Thr Ile Ser Leu
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<210> 4559

<211> 919

<212> DNA

<213> Homo sapiens

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<210> 4560

<211> 126

<212> PRT

<213> Homo sapiens

<400> 4560

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 35 40 45
 Gly Tyr Phe Glu Asn Ile Pro Lys Gly Leu Asp Gln Glu Gly Trp Thr
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 Arg Gly Gly Ile Gln Pro Gln Met Pro Gly Gly Tyr Ala Leu Ser Gln
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<213> Homo sapiens
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<210> 4562

<211> 1182

<212> PRT

<213> Homo sapiens

<400> 4562

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 Ser Ser His Arg Tyr His Lys Leu Ile Trp Gly Pro Tyr Lys Met Asp
 65 70 75 80
 Ser Lys Gly Asp Val Ser Gly Val Leu Ile Ala Gly Gly Glu Asn Gly
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 Val Val Ile Ala Gln Asn Asp Lys His Thr Gly Pro Val Arg Ala Leu
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 Asp Val Asn Ile Phe Gln Thr Asn Leu Val Ala Ser Gly Ala Asn Glu
 130 135 140
 Ser Glu Ile Tyr Ile Trp Asp Leu Asn Asn Phe Ala Thr Pro Met Thr
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 Pro Gly Ala Lys Thr Gln Pro Pro Glu Asp Ile Ser Cys Ile Ala Trp
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 Ala Thr Val Trp Asp Leu Arg Glu Asn Glu Pro Ile Ile Lys Val Ser
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 Val Ala Thr Gln Met Val Leu Ala Ser Glu Asp Asp Arg Leu Pro Val
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 Ile Gln Met Trp Asp Leu Arg Phe Ala Ser Ser Pro Leu Arg Val Leu
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 485 490 495
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 Ser Glu Phe Leu Pro Ser Ser Gly Gly Thr Phe Asn Ile Ser Val Ser
 515 520 525
 Gly Asp Ile Asp Gly Leu Ile Thr Gln Ala Leu Leu Thr Gly Asn Phe
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 Glu Ser Ala Val Asp Leu Cys Leu His Asp Asn Arg Met Ala Asp Ala
 545 550 555 560
 Ile Ile Leu Ala Ile Ala Gly Gly Gln Glu Leu Leu Ala Arg Thr Gln
 565 570 575
 Lys Lys Tyr Phe Ala Lys Ser Gln Ser Lys Ile Thr Arg Leu Ile Thr
 580 585 590
 Ala Val Val Met Lys Asn Trp Lys Glu Ile Val Glu Ser Cys Asp Leu
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 Lys Asn Trp Arg Glu Ala Leu Ala Ala Val Leu Thr Tyr Ala Lys Pro
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 Glu Gly Asp Ser Leu Leu Gln Thr Gln Ala Cys Leu Cys Tyr Ile Cys
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 Ala Gln Gly Ser Ile Ala Ala Ala Leu Ala Phe Leu Pro Asp Asn Thr
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 Gly Gln Leu Pro Thr Ser Pro Gly His Met His Thr Gln Val Pro Pro
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 Tyr Pro Gln Pro Gln Pro Tyr Gln Pro Ala Gln Pro Tyr Pro Phe Gly
 835 840 845
 Thr Gly Gly Ser Ala Met Tyr Arg Pro Gln Gln Pro Val Ala Pro Pro
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 Thr Ser Asn Ala Tyr Pro Asn Thr Pro Tyr Ile Ser Ser Ala Ser Ser
 865 870 875 880
 Tyr Thr Gly Gln Ser Gln Leu Tyr Ala Ala Gln His Gln Ala Ser Ser

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 900 905 910
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 1090 1095 1100
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 1140 1145 1150
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<210> 4563

<211> 2037

<212> .DNA

<213> Homo sapiens

<400> 4563

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<210> 4564

<211> 354

<212> PRT

<213> Homo sapiens

<400> 4564

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Ser | Ser | Lys | Leu | Ala | Val | Gly | Tyr | Ser | Cys | Met | Pro | Ser | Asn | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Glu | Asp | Gly | Leu | Val | Val | Leu | Val | Phe | Asn | Lys | Lys | Glu | Thr | Glu |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Ile | Arg | Ser | Gln | Gln | Gln | Gln | Leu | Val | Glu | Ser | Leu | His | Lys | Val | Leu |
| | | | 50 | | | 55 | | | | | 60 | | | | |
| Gly | Gly | Asn | Gln | Thr | Leu | Thr | Val | Asn | Val | Glu | Gly | Thr | Lys | Thr | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Pro | Asp | Asp | Gln | Thr | Glu | Val | Val | Ile | Tyr | Val | Val | Glu | Arg | Ser | Pro |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Asn | Gly | Thr | Ser | Arg | Arg | Val | Pro | Ala | Thr | Thr | Leu | Tyr | Ala | His | Phe |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Glu | Gln | Ala | Asn | Ile | Lys | Thr | Gln | Leu | Gln | Gln | Leu | Gly | Val | Thr | Leu |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Ser | Met | Thr | Arg | Thr | Glu | Leu | Ser | Pro | Ala | Gln | Ile | Arg | Gln | Leu | Leu |
| | | | | | | 135 | | | | | 140 | | | | |
| Gln | Asn | Pro | Pro | Ala | Gly | Val | Asp | Pro | Ile | Ile | Trp | Glu | Gln | Ala | Lys |
| 145 | | | | | | 150 | | | | | 155 | | | | 160 |
| Val | Asp | Asn | Pro | Asp | Ser | Glu | Lys | Leu | Ile | Pro | Val | Pro | Met | Val | Gly |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Phe | Lys | Glu | Leu | Leu | Arg | Arg | Leu | Lys | Val | Gln | Asp | Gln | Met | Thr | Lys |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gln | His | Gln | Thr | Arg | Leu | Asp | Ile | Ile | Ser | Glu | Asp | Ile | Ser | Glu | Leu |
| | | | 195 | | | | 200 | | | | | 205 | | | |
| Gln | Lys | Asn | Gln | Thr | Thr | Ser | Val | Ala | Lys | Ile | Ala | Gln | Tyr | Lys | Arg |
| | | | 210 | | | 215 | | | | | 220 | | | | |
| Lys | Leu | Met | Asp | Leu | Ser | His | Arg | Thr | Leu | Gln | Val | Leu | Ile | Lys | Gln |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Glu | Ile | Gln | Arg | Lys | Ser | Gly | Tyr | Ala | Ile | Gln | Ala | Asp | Glu | Glu | Gln |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Arg | Val | Gln | Leu | Asp | Thr | Ile | Gln | Gly | Glu | Leu | Asn | Ala | Pro | Thr |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Gln | Phe | Lys | Gly | Arg | Leu | Asn | Glu | Leu | Met | Ser | Gln | Ile | Arg | Met | Gln |
| | | | 275 | | | | 280 | | | | | 285 | | | |
| Asn | His | Phe | Gly | Ala | Val | Arg | Ser | Glu | Glu | Arg | Tyr | Tyr | Ile | Asp | Ala |
| | | | 290 | | | | 295 | | | | 300 | | | | |
| Asp | Leu | Leu | Arg | Glu | Ile | Lys | Gln | His | Leu | Lys | Gln | Gln | Gln | Glu | Gly |
| 305 | | | | | 310 | | | | | 315 | | | | 320 | |
| Leu | Ser | His | Leu | Ile | Ser | Ile | Ile | Lys | Asp | Asp | Leu | Glu | Asp | Ile | Lys |
| | | | | 325 | | | | | 330 | | | | | 335 | |
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Phe Ser

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<211> 2344

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<213> Homo sapiens

<400> 4565

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<211> 247

<212> PRT

<213> Homo sapiens

<400> 4566

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| Met | Gln | Val | Val | Arg | Glu | Gln | Ile | Thr | Arg | Ala | Leu | Pro | Ser | Lys | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asn | Ser | Leu | Asp | Gln | Phe | Lys | Ser | Lys | Leu | Arg | Ser | Leu | Ser | Tyr | Ser |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| Glu | Ile | Leu | Arg | Leu | Arg | Gln | Ser | Glu | Arg | Met | Ser | Gln | Asp | Asp | Phe |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Gln | Ser | Pro | Pro | Ile | Val | Glu | Leu | Arg | Glu | Lys | Ile | Gln | Pro | Glu | Ile |
| | 50 | | | | 55 | | | | | | 60 | | | | |
| Leu | Glu | Leu | Ile | Lys | Gln | Arg | Leu | Asn | Arg | Leu | Cys | Glu | Gly | Ser | |
| 65 | | | | 70 | | | | 75 | | | | | 80 | | |
| Ser | Phe | Arg | Lys | Ile | Gly | Asn | Arg | Arg | Arg | Gln | Glu | Arg | Phe | Trp | Tyr |

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<212> DNA
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720
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780

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<211> 120

<212> PRT

<213> Homo sapiens

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| Met | Pro | Leu | Leu | Val | Glu | Gly | Arg | Arg | Val | Arg | Leu | Pro | Gln | Ser | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Asp | Leu | Val | Arg | Ala | His | Pro | Pro | Leu | Glu | Glu | Arg | Ala | Arg | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Leu | Arg | Gly | Gln | Ser | Val | Gln | Gln | Val | Gly | Pro | Gln | Gly | Leu | Leu | Tyr |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Val | Gln | Gln | Arg | Glu | Leu | Ala | Val | Thr | Ser | Pro | Lys | Asp | Gly | Ser | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ser | Ile | Leu | Gly | Ser | Asp | Asp | Ala | Thr | Thr | Cys | His | Ile | Val | Val | Leu |
| | 65 | | | | 70 | | | | | 75 | | | | 80 | |
| Arg | His | Thr | Gly | Asn | Gly | Ala | Thr | Cys | Leu | Thr | His | Cys | Asp | Gly | Thr |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Thr | Lys | Ala | Glu | Val | Pro | Leu | Ile | Met | Asn | Ser | Ile | Lys | Ser | Phe |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ser | Asp | His | Ala | Gln | Cys | Gly | Arg | | | | | | | | |
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<211> 1797

<212> DNA

<213> Homo sapiens

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<211> 141
 <212> PRT
 <213> Homo sapiens

<400> 4570

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Met | Leu | Leu | Tyr | Leu | Phe | Arg | Arg | Ala | Ala | Ser | Ile | Thr | Leu | Ala | Thr |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gln | Thr | Trp | His | Ile | Arg | Phe | Gly | Asp | Asn | Gly | Leu | Gly | Thr | Leu | Met |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Leu | Gly | Pro | Gly | Glu | Thr | Val | Leu | Arg | Gln | Lys | Leu | Gly | Val | Gln |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Gly | Gly | Pro | Arg | Val | Arg | His | Cys | Gly | Glu | Gly | Asn | Ala | Gly | Glu | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gly | Pro | Thr | Leu | Gln | Leu | Gly | Thr | Arg | Gly | Arg | Lys | Gln | Arg | Gly | Gln |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Ser | Val | Pro | Leu | Pro | Gln | Glu | Gln | Thr | Ser | Gly | Pro | Gln | Glu | Gly |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Gln | Ala | Ala | Arg | Ser | Leu | Pro | Ser | Ala | Gly | Gly | Ser | Arg | Gly | Arg |
| | | 115 | | | | | 120 | | | | | | 125 | | |
| Lys | Gly | Trp | Arg | Ala | Ala | Gly | Arg | Gln | Pro | Ser | Thr | Arg | | | |
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<210> 4571
 <211> 1084
 <212> DNA
 <213> Homo sapiens

<400> 4571

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<210> 4572

<211> 126

<212> PRT

<213> Homo sapiens

<400> 4572

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Lys | Thr | Gln | Gln | Asn | Arg | Lys | Leu | Thr | Asp | Phe | Tyr | Pro | Val | Arg | Arg |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ser | Ser | Arg | Lys | Ser | Lys | Ala | Glu | Leu | Gln | Ser | Glu | Glu | Arg | Lys | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ile | Asp | Glu | Leu | Ile | Glu | Ser | Gly | Lys | Glu | Glu | Gly | Met | Lys | Ile | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Leu | Ile | Asp | Gly | Lys | Gly | Arg | Gly | Val | Ile | Ala | Thr | Lys | Gln | Phe | Ser |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Arg | Gly | Asp | Phe | Val | Val | Glu | Tyr | His | Gly | Asp | Leu | Ile | Glu | Ile | Thr |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asp | Ala | Lys | Lys | Arg | Glu | Ala | Leu | Tyr | Ala | Gln | Asp | Pro | Ser | Thr | Gly |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Cys | Tyr | Met | Tyr | Tyr | Phe | Gln | Tyr | Leu | Ser | Lys | Thr | Tyr | Trp | | |
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<211> 309

<212> DNA

<213> Homo sapiens

<400> 4573

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<211> 103
<212> PRT
<213> Homo sapiens

<400> 4574
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35 40 45
Ala Gly Ala Val Gly Thr Pro Gly Lys Arg Gly Pro Ser Gly Pro Gln
50 55 60
Gly Leu Leu Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His
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Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr
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<210> 4575
<211> 1068
<212> DNA
<213> Homo sapiens

<400> 4575
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<210> 4576

<211> 107

<212> PRT

<213> Homo sapiens

<400> 4576

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| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Gln | Ala | Ala | Leu | His | Leu | Leu | Gln | Pro | Leu | Gly | His | Val | Ala | Arg | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Ala | Arg | His | Val | Ala | Thr | Ala | Gln | Gly | Glu | Val | Leu | Pro | Pro | Gly |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Gly | Leu | Gly | Gly | Ala | Ala | Gln | Arg | Ala | Arg | Gly | Gln | Ser | His | Gly | Gly |
| | | | 50 | | | 55 | | | | 60 | | | | | |
| Thr | Val | Pro | Gly | Asn | Ala | Pro | Ala | Ala | Asp | Leu | Leu | Ala | Leu | Ser | Pro |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Arg | Leu | Glu | Arg | Ser | Gly | Thr | Ile | Ser | Thr | His | Cys | Lys | Leu | Arg | Leu |
| | | | 85 | | | | | 90 | | | | | | 95 | |
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<210> 4577

<211> 3525

<212> DNA

<213> Homo sapiens

<400> 4577

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<210> 4578

<211> 1007

<212> PRT

<213> Homo sapiens

<400> 4578

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Leu Ala Ser Gly Asp Arg Ser Gly Asn Leu Arg Gln Val Gly Pro Gly
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Ser Val Gln Cys Thr Pro Pro Ser Ser Ser Ser Gly Ser Gln Gly Ser
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Gly Gln Lys Pro Trp Pro Trp His Leu Leu Leu Pro Ile Gly Asn Glu
 65           70           75           80
Gly Leu Ile His Glu Leu His Phe Met Asp Glu Leu Val Lys Val Glu
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Ala His Asp Ala Glu Val Leu Cys Leu Glu Tyr Ser Lys Pro Glu Thr
 100          105          110
Gly Leu Thr Leu Leu Ala Ser Ala Ser Arg Asp Arg Leu Ile His Val
 115          120          125
Leu Asn Val Glu Lys Asn Tyr Asn Leu Glu Gln Thr Leu Asp Asp His
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Ser Ser Ser Ile Thr Ala Ile Lys Phe Ala Gly Asn Arg Asp Ile Gln
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Met Ile Ser Cys Gly Ala Asp Lys Ser Ile Tyr Phe Arg Ser Ala Gln
 165          170          175
Gln Gly Ser Asp Gly Leu His Phe Val Arg Thr His His Val Ala Glu
 180          185          190
Lys Thr Thr Leu Tyr Asp Met Asp Ile Asp Ile Thr Gln Lys Tyr Val
 195          200          205
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Gly Lys Gln Lys Lys Cys Tyr Lys Gly Ser Gln Gly Asp Glu Gly Ser
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Cys Ser Asp Lys Ser Ile Ser Val Ile Asp Phe Tyr Ser Gly Glu Cys
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Leu Ser Ala Leu Phe Ala Glu Ile Ile Thr Ser Met Lys Phe Thr Tyr
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 325          330          335
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Glu Ile Asp His Arg Gln Gln Gln Gln His Thr Asn Asp Lys Lys Arg
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 385          390          395          400
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 675 680 685
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 690 695 700
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 785 790 795 800
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 Asp Thr Gln Pro Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro
 820 825 830
 Ser Pro Val Glu Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg

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Asn Pro Gln Leu Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala
865              870              875              880
Ser Leu Leu Glu Pro Thr Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys
      885              890              895
Arg Pro Pro Ser Lys Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro
      900              905              910
Val Ala Arg Trp Thr Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser
      915              920              925
Pro Pro Ser Cys Gly Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp
      930              935              940
Gly Leu Val Trp Pro Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg
945              950              955              960
Pro His Arg Arg Cys Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys
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 <211> 321
 <212> DNA
 <213> Homo sapiens

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<210> 4580
 <211> 107
 <212> PRT
 <213> Homo sapiens

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20      25      30
Ile Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu
35      40      45
Leu Glu Ile Asp His Arg Gln Gln Gln Gln His Thr Asn Asp Lys Lys

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50 55 60
 Arg Ser Gly Pro Pro Arg Gln Asp Thr Tyr Val Ser Thr Pro Ser Glu
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 Ile His Ser Leu Ser Pro Gly Glu Gln Thr Glu Asp Asp Leu Glu Glu
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 Glu Cys Glu Pro Glu Glu Met Leu Lys Thr Pro
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<210> 4581

<211> 1396

<212> DNA

<213> Homo sapiens

<400> 4581

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<210> 4582

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<212> PRT

<213> Homo sapiens

<400> 4582

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| Glu | Leu | Met | Lys | Ala | Phe | Glu | Thr | Pro | Glu | Glu | Lys | Arg | Ala | Arg | Arg |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Ala | Lys | Lys | Glu | Ala | Lys | Glu | Arg | Lys | Lys | Arg | Glu | Lys | Met | Gly |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Trp | Gly | Glu | Glu | Tyr | Met | Gly | Tyr | Thr | Asn | Thr | Asp | Asn | Pro | Phe | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Asn | Asn | Leu | Leu | Gly | Thr | Phe | Ile | Trp | Asn | Lys | Ala | Leu | Glu | Lys |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Lys | Gly | Ile | Ser | His | Leu | Glu | Glu | Lys | Glu | Leu | Lys | Glu | Arg | Asn | Lys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
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| | | 115 | | | | | 120 | | | | | | 125 | | |
| Arg | Leu | Glu | Arg | Glu | Arg | Glu | Lys | Ala | Met | Arg | Glu | Gln | Glu | Leu | Glu |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Met | Leu | Gln | Arg | Val | Lys | Gly | Thr | Glu | His | Phe | Lys | Thr | Trp | Glu | Glu |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Gln | Glu | Asp | Asn | Phe | His | Leu | Gln | Gln | Ala | Lys | Leu | Arg | Ser | Lys | Ile |
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| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ile | Ser | Ala | Glu | Asp | Asp | Asp | Leu | Ala | Gly | Glu | Met | His | Glu | Pro | Tyr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Thr | Phe | Leu | Asn | Gly | Leu | Thr | Val | Ala | Asp | Met | Glu | Asp | Leu | Leu | Glu |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Asp | Ile | Gln | Val | Tyr | Met | Glu | Leu | Glu | Gln | Gly | Lys | Asn | Ala | Asp | Phe |
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| Trp | Arg | Asp | Met | Thr | Thr | Ile | Thr | Glu | Asp | Glu | Ile | Ser | Lys | Leu | Arg |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Lys | Leu | Glu | Ala | Ser | Gly | Lys | Gly | Pro | Gly | Glu | Arg | Arg | Glu | Gly | Val |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asn | Ala | Ser | Val | Ser | Ser | Asp | Val | Gln | Ser | Val | Phe | Lys | Gly | Lys | Thr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Tyr | Asn | Gln | Leu | Gln | Val | Ile | Phe | Gln | Gly | Ile | Glu | Gly | Lys | Ile | Arg |
| | | 290 | | | | 295 | | | | 300 | | | | | |
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<210> 4584

<211> 923

<212> PRT

<213> Homo sapiens

<400> 4584

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Leu | Tyr | His | Asp | Pro | Asp | Pro | Ser | Gly | Lys | Glu | Arg | Ala | Ser | Phe |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Trp | Leu | Gly | Glu | Leu | Gln | Arg | Ser | Val | His | Ala | Trp | Glu | Ile | Ser | Asp |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gln | Leu | Leu | Gln | Ile | Arg | Gln | Asp | Val | Glu | Ser | Cys | Tyr | Phe | Ala | Ala |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Gln | Thr | Met | Lys | Met | Lys | Ile | Gln | Thr | Ser | Phe | Tyr | Glu | Leu | Pro | Thr |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Asp | Ser | His | Ala | Ser | Leu | Arg | Asp | Ser | Leu | Leu | Thr | His | Ile | Gln | Asn |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Lys | Asp | Leu | Ser | Pro | Val | Ile | Val | Thr | Gln | Leu | Ala | Leu | Ala | Ile |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ala | Asp | Leu | Ala | Leu | Gln | Met | Pro | Ser | Trp | Lys | Gly | Cys | Val | Gln | Thr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Val | Glu | Lys | Tyr | Ser | Asn | Asp | Val | Thr | Ser | Leu | Pro | Phe | Leu | Leu |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Glu | Ile | Leu | Thr | Val | Leu | Pro | Glu | Glu | Val | His | Ser | Arg | Ser | Leu | Arg |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Ile | Gly | Ala | Asn | Arg | Arg | Thr | Glu | Ile | Ile | Glu | Asp | Leu | Ala | Phe | Tyr |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| Ser | Ser | Thr | Val | Val | Ser | Leu | Leu | Met | Thr | Cys | Val | Glu | Lys | Ala | Gly |
| | | 180 | | | | | | 185 | | | | 190 | | | |
| Thr | Asp | Glu | Lys | Met | Leu | Met | Lys | Val | Phe | Arg | Cys | Leu | Gly | Ser | Trp |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Phe | Asn | Leu | Gly | Val | Leu | Asp | Ser | Asn | Phe | Met | Ala | Asn | Asn | Lys | Leu |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Leu | Ala | Leu | Leu | Phe | Glu | Val | Leu | Gln | Gln | Asp | Lys | Thr | Ser | Ser | Asn |

225 230 235 240
 Leu His Glu Ala Ala Ser Asp Cys Val Cys Ser Ala Leu Tyr Ala Ile
 245 250 255
 Glu Asn Val Glu Thr Asn Leu Pro Leu Ala Met Gln Leu Phe Gln Gly
 260 265 270
 Val Leu Thr Leu Glu Thr Ala Tyr His Met Ala Val Ala Arg Glu Asp
 275 280 285
 Leu Asp Lys Val Leu Asn Tyr Cys Arg Ile Phe Thr Glu Leu Cys Glu
 290 295 300
 Thr Phe Leu Glu Lys Ile Val Cys Thr Pro Gly Gln Gly Leu Gly Asp
 305 310 315 320
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 325 330 335
 Glu Val Val Glu Ile Ser Phe Asn Phe Trp Tyr Arg Leu Gly Glu His
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 Leu Tyr Lys Thr Asn Asp Glu Val Ile His Gly Ile Phe Lys Ala Tyr
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 Ile Gln Arg Leu Leu His Ala Leu Ala Arg His Cys Gln Leu Glu Pro
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 Asp His Glu Gly Val Pro Glu Glu Thr Asp Asp Phe Gly Glu Phe Arg
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 405 410 415
 Met Glu Cys Phe Ala Gln Leu Tyr Ser Thr Leu Lys Glu Gly Asn Pro
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 Pro Trp Glu Val Thr Glu Ala Val Leu Phe Ile Met Ala Ala Ile Ala
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 Lys Ser Val Asp Pro Glu Asn Asn Pro Thr Leu Val Glu Val Leu Glu
 450 455 460
 Gly Val Val Arg Leu Pro Glu Thr Val His Thr Ala Val Arg Tyr Thr
 465 470 475 480
 Ser Ile Glu Leu Val Gly Glu Met Ser Glu Val Val Asp Arg Asn Pro
 485 490 495
 Gln Phe Leu Asp Pro Val Leu Gly Tyr Leu Met Lys Gly Leu Cys Glu
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 Lys Pro Leu Ala Ser Ala Ala Ala Lys Ala Ile His Asn Ile Cys Ser
 515 520 525
 Val Cys Arg Asp His Met Ala Gln His Phe Asn Gly Leu Leu Glu Ile
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 Ala Arg Ser Leu Asp Ser Phe Leu Leu Ser Pro Glu Ala Ala Val Gly
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 565 570 575
 Ile Thr Glu Cys Leu Ser Glu Leu Cys Ser Val Gln Val Met Ala Leu
 580 585 590
 Lys Lys Leu Leu Ser Gln Glu Pro Ser Asn Gly Ile Ser Ser Asp Pro
 595 600 605
 Thr Val Phe Leu Asp Arg Leu Ala Val Ile Phe Arg His Thr Asn Pro
 610 615 620
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 625 630 635 640
 Ile Trp Pro Val Leu Ser Glu Thr Leu Asn Lys His Arg Ala Asp Asn
 645 650 655
 Arg Ile Val Glu Arg Cys Cys Arg Cys Leu Arg Phe Ala Val Arg Cys

660 665 670
 Val Gly Lys Gly Ser Ala Ala Leu Leu Gln Pro Leu Val Thr Gln Met
 675 680 685
 Val Asn Val Tyr His Val His Gln His Ser Cys Phe Leu Tyr Leu Gly
 690 695 700
 Ser Ile Leu Val Asp Glu Tyr Gly Met Glu Glu Gly Cys Arg Gln Gly
 705 710 715 720
 Leu Leu Asp Met Leu Gln Ala Leu Cys Ile Pro Thr Phe Gln Leu Leu
 725 730 735
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 Phe Arg Leu Ala Thr Arg Phe Ile Gln Arg Ser Pro Val Thr Leu Leu
 755 760 765
 Arg Ser Gln Val Val Ile Pro Ile Leu Gln Trp Ala Ile Ala Ser Thr
 770 775 780
 Thr Leu Asp His Arg Asp Ala Asn Cys Ser Val Met Arg Phe Leu Arg
 785 790 795 800
 Asp Leu Ile His Thr Gly Val Ala Asn Asp His Glu Glu Asp Phe Glu
 805 810 815
 Leu Arg Lys Glu Leu Ile Gly Gln Val Met Asn Gln Leu Gly Gln Gln
 820 825 830
 Leu Val Ser Gln Leu Leu His Thr Cys Cys Phe Cys Leu Pro Pro Tyr
 835 840 845
 Thr Leu Pro Asp Val Ala Glu Val Leu Trp Glu Ile Met Gln Val Asp
 850 855 860
 Arg Pro Thr Phe Cys Arg Trp Leu Glu Asn Ser Leu Lys Gly Leu Pro
 865 870 875 880
 Lys Glu Thr Thr Val Gly Ala Val Thr Val Thr His Lys Gln Leu Thr
 885 890 895
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<210> 4585

<211> 1952

<212> DNA

<213> Homo sapiens

<400> 4585

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 420

cgggtacaata gaattaaagc gcttccttct gggattggag ctcaccagca tttgaaaact
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1740
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<210> 4586

<211> 530

<212> PRT

<213> Homo sapiens

<400> 4586

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Lys Asp Val His Lys Gly Val Gly Gly Ile Ile Phe Ser Ser Ser Pro
      35              40              45
Ile Leu Asp Leu Ser Glu Ser Gly Leu Cys Arg Leu Glu Glu Val Phe
      50              55              60
Arg Ile Pro Ser Leu Gln Gln Leu His Leu Gln Arg Asn Ala Leu Cys
65              70              75              80
Val Ile Pro Gln Asp Phe Phe Gln Leu Leu Pro Asn Leu Thr Trp Leu
      85              90              95
Asp Leu Arg Tyr Asn Arg Ile Lys Ala Leu Pro Ser Gly Ile Gly Ala
      100             105             110
His Gln His Leu Lys Thr Leu Leu Leu Glu Arg Asn Pro Ile Lys Met
      115             120             125
Leu Pro Val Glu Leu Gly Ser Val Thr Thr Leu Lys Ala Leu Asn Leu
      130             135             140
Arg His Cys Pro Leu Glu Phe Pro Pro Gln Leu Val Val Gln Lys Gly
145             150             155             160
Leu Val Ala Ile Gln Arg Phe Leu Arg Met Trp Ala Val Glu His Ser
      165             170             175
Leu Pro Arg Asn Pro Thr Ser Gln Glu Ala Pro Pro Val Arg Glu Met
      180             185             190
Thr Leu Arg Asp Leu Pro Ser Pro Gly Leu Glu Leu Ser Gly Asp His
      195             200             205
Ala Ser Asn Gln Gly Ala Val Asn Ala Gln Asp Pro Glu Gly Ala Val
      210             215             220
Met Lys Glu Lys Ala Ser Phe Leu Pro Pro Val Glu Lys Pro Asp Leu
225             230             235             240
Ser Glu Leu Arg Lys Ser Ala Asp Ser Ser Glu Asn Trp Pro Ser Glu
      245             250             255
Glu Glu Ile Arg Arg Phe Trp Lys Leu Arg Gln Glu Ile Val Glu His
      260             265             270
Val Lys Ala Asp Val Leu Gly Asp Gln Leu Leu Thr Arg Glu Leu Pro
      275             280             285
Pro Asn Leu Lys Ala Ala Leu Asn Ile Glu Lys Glu Leu Pro Lys Pro
      290             295             300
Arg His Val Phe Arg Arg Lys Thr Ala Ser Ser Arg Ser Ile Leu Pro
305             310             315             320
Asp Leu Leu Ser Pro Tyr Gln Met Ala Ile Arg Ala Lys Arg Leu Glu
      325             330             335
Glu Ser Arg Ala Ala Ala Leu Arg Glu Leu Gln Glu Lys Gln Ala Leu
      340             345             350
Met Glu Gln Gln Arg Arg Glu Lys Arg Ala Leu Gln Glu Trp Arg Glu
      355             360             365
Arg Ala Gln Arg Met Arg Lys Arg Lys Glu Glu Leu Ser Lys Leu Leu
      370             375             380
Pro Pro Arg Arg Ser Met Val Ala Ser Lys Ile Pro Ser Ala Thr Asp

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385          390          395          400
Leu Ile Asp Asn Arg Lys Val Pro Leu Asn Pro Pro Gly Lys Met Lys
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Pro Ser Lys Glu Lys Ser Pro Gln Ala Ser Lys Glu Met Ser Ala Leu
          420          425          430
Gln Glu Arg Asn Leu Glu Glu Lys Ile Lys Gln His Val Leu Gln Met
          435          440          445
Arg Glu Gln Arg Arg Phe His Gly Gln Ala Pro Leu Glu Glu Met Arg
          450          455          460
Lys Ala Ala Glu Asp Leu Glu Ile Ala Thr Glu Leu Gln Asp Glu Val
465          470          475          480
Leu Lys Leu Lys Leu Gly Leu Thr Leu Asn Lys Asp Arg Arg Arg Ala
          485          490          495
Ala Leu Thr Gly Asn Leu Ser Leu Gly Leu Pro Ala Ala Gln Pro Gln
          500          505          510
Asn Thr Phe Phe Asn Thr Lys Tyr Gly Glu Ser Gly Asn Val Arg Arg
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Tyr Gln
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<210> 4587
<211> 1723
<212> DNA
<213> Homo sapiens

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240
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420
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540
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720
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780
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840

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 960
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 1020
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 1080
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 1620
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<210> 4588

<211> 328

<212> PRT

<213> Homo sapiens

<400> 4588

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 35 40 45
 Pro Ser Phe Pro Lys Lys Lys Thr Ala Ala Ser Ser Asn Gly Ser Gly
 50 55 60
 Gln Pro Leu Asp Lys Lys Ala Ala Val Ser Trp Leu Thr Pro Ala Pro
 65 70 75 80
 Ser Lys Lys Ala Asp Ser Val Ala Ala Lys Val Asp Leu Leu Gly Glu
 85 90 95
 Phe Gln Ser Ala Leu Pro Lys Ile Asn Ser His Pro Thr Arg Ser Gln
 100 105 110
 Lys Lys Ser Ser Gln Lys Lys Ser Ser Lys Lys Asn His Pro Gln Lys
 115 120 125
 Asn Ala Pro Gln Asn Ser Thr Gln Ala His Ser Glu Asn Lys Cys Ser

130 135 140
 Gly Ala Ser Gln Lys Leu Pro Arg Lys Met Val Ala Ile Asp Cys Glu
 145 150 155 160
 Met Val Gly Thr Gly Pro Lys Gly His Val Ser Ser Leu Ala Arg Cys
 165 170 175
 Ser Ile Val Asn Tyr Asn Gly Asp Val Leu Tyr Asp Glu Tyr Ile Leu
 180 185 190
 Pro Pro Cys His Ile Val Asp Tyr Arg Thr Arg Trp Ser Gly Ile Arg
 195 200 205
 Lys Gln His Met Val Asn Ala Thr Pro Phe Lys Ile Ala Arg Gly Gln
 210 215 220
 Ile Leu Lys Ile Leu Thr Gly Lys Ile Val Val Gly His Ala Ile His
 225 230 235 240
 Asn Asp Phe Lys Ala Leu Gln Tyr Phe His Pro Lys Ser Leu Thr Arg
 245 250 255
 Asp Thr Ser His Ile Pro Pro Leu Asn Arg Lys Ala Asp Cys Pro Glu
 260 265 270
 Asn Ala Thr Met Ser Leu Lys His Leu Thr Lys Lys Leu Leu Asn Arg
 275 280 285
 Asp Ile Gln Val Gly Lys Ser Gly His Ser Ser Val Glu Asp Ala Gln
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<210> 4589

<211> 585

<212> DNA

<213> Homo sapiens

<400> 4589

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 360
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 480
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<210> 4590

<211> 121
 <212> PRT
 <213> Homo sapiens

<400> 4590

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      20           25           30
Gly Val Arg Val Ser Ala Ala Pro Leu Gly Gln Gly Gly Gly His Thr
      35           40           45
His Thr Leu Ser Pro Leu Ser Phe Arg Cys Ser Gln Arg Glu Pro Gln
      50           55           60
Gly Phe Arg Pro Gly Met Arg Cys Gly Gly Ser Ser Leu Gly Arg Thr
65           70           75           80
Cys Cys Ser Pro Thr Arg Arg Ala Cys Val Val Ser Arg Ala Val Thr
      85           90           95
Val Ala Ser Gly Phe Leu Gln Ala Ala Arg Leu Gly Pro Ser Leu
      100          105          110
Glu Cys Trp Ala Ala Gly Ser Ala Gly
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<210> 4591
 <211> 496
 <212> DNA
 <213> Homo sapiens

<400> 4591

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| Gln | Ile | Ile | Pro | Gly | Thr | Ala | Leu | Tyr | Asn | Ile | Gly | Asp | Met | Val | His | | | | |
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| | 690 | 695 |
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| Ser Lys Arg Ala Cys Asn Leu Thr Asp Thr Gln Lys Glu Val Lys Glu | | 735 |
| | 740 | 745 |
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| 785 | 790 | 795 |
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Gly Pro Ala Asp Pro Ala Ala Gln His Ser Arg Asp Gly Gln Gly Gly
      65           70           75           80
Trp Pro Pro Ala Gln Gly Thr Ala Ser Thr Ala Gly Lys Ser Gly Ala
      85           90           95
Pro Gly Ala Trp Ser Val Gly Gly Ala Thr Gly Pro Arg Gly Ala Lys
      100          105          110
Gly Pro Arg Thr Gly Arg Pro Ala Pro Ser Pro Gly Ser Pro Pro Arg
      115          120          125
Glu Ser Arg Cys Leu Ala Pro Gly Pro Ser Arg Leu Asp Pro Gly Pro
      130          135          140
Ala Xaa Ala Ala Ala Pro Gly Ala Leu Arg Pro Pro Ala Asp Pro Ser
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Gln Ala Arg Pro Arg Arg Gly Ser Asn
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<210> 4597
 <211> 515
 <212> DNA
 <213> Homo sapiens

<400> 4597

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<210> 4598

<211> 135
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<400> 4598
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 Pro Gly Pro Trp Gly Val Gly Arg Gly Thr Cys Leu Thr Ala Gln Leu
 35 40 45
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 50 55 60
 Ser Pro Arg Asn Ser Leu Arg Asn Ile Leu Thr Leu Asn Ser Thr Ala
 65 70 75 80
 Glu Pro Ser Ser Trp Glu Ser Arg Glu Arg Pro Leu Gln Ser Arg Asn
 85 90 95
 Val Tyr Ser Ser Ala Ser Phe Ser Glu His Leu Asp Gly Gly Cys Ser
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 Val Asp Gln Ser Leu Arg Glu
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<210> 4599
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 <212> DNA
 <213> Homo sapiens

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<210> 4600
 <211> 228
 <212> PRT
 <213> Homo sapiens

<400> 4600
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 Phe Arg Met Glu Ser Gly Ile Glu Pro Ser Val Asp Leu Glu Thr Leu
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 Asp Glu Arg Ile Lys Ile Arg Glu Met Ile Leu Lys Gly Gln Ile Gln
 65 70 75 80
 Glu Ala Ile Ala Leu Ile Asn Ser Leu His Pro Glu Leu Leu Asp Thr
 85 90 95
 Asn Arg Tyr Leu Tyr Phe His Leu Gln Gln His Leu Ile Glu Leu
 100 105 110
 Ile Arg Gln Arg Glu Thr Glu Ala Ala Leu Glu Phe Ala Gln Thr Gln
 115 120 125
 Leu Ala Glu Gln Gly Glu Glu Ser Arg Glu Cys Leu Thr Glu Met Glu
 130 135 140
 Arg Thr Leu Ala Leu Leu Ala Phe Asp Ser Pro Glu Glu Ser Pro Phe
 145 150 155 160
 Gly Asp Leu Leu His Thr Met Gln Arg Gln Lys Val Trp Ser Glu Val
 165 170 175
 Asn Gln Ala Val Leu Asp Tyr Glu Asn Arg Glu Ser Thr Pro Lys Leu
 180 185 190
 Ala Lys Leu Leu Lys Leu Leu Leu Trp Ala Gln Asn Glu Leu Asp Gln
 195 200 205
 Lys Lys Val Lys Tyr Pro Lys Met Thr Asp Leu Ser Lys Gly Val Ile
 210 215 220
 Glu Glu Pro Lys
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<210> 4601
 <211> 916
 <212> DNA
 <213> Homo sapiens

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 180
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<210> 4602

<211> 305

<212> PRT

<213> Homo sapiens

<400> 4602

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 35 40 45
 Arg Met Val Gln Ser Gly Gly Cys Ser Ala Asn Asp Phe Arg Glu Val
 50 55 60
 Phe Lys Lys Asn Ile Glu Lys Arg Val Arg Ser Leu Pro Glu Ile Asp
 65 70 75 80
 Gly Leu Ser Lys Glu Thr Val Leu Ser Ser Trp Ile Ala Lys Tyr Asp
 85 90 95
 Ala Ile Tyr Arg Gly Glu Glu Asp Leu Cys Lys Gln Pro Asn Arg Met
 100 105 110
 Ala Leu Ser Ala Val Ser Glu Leu Ile Leu Ser Lys Glu Gln Leu Tyr
 115 120 125
 Glu Met Phe Gln Gln Ile Leu Gly Ile Lys Lys Leu Glu His Gln Leu
 130 135 140
 Leu Tyr Asn Ala Cys Gln Leu Asp Asn Ala Asp Glu Gln Ala Ala Gln
 145 150 155 160
 Ile Arg Arg Glu Leu Asp Gly Arg Leu Gln Leu Ala Asp Lys Met Ala
 165 170 175
 Lys Glu Arg Lys Phe Pro Lys Phe Ile Ala Lys Asp Met Glu Asn Met
 180 185 190
 Tyr Ile Glu Glu Leu Arg Ser Ser Val Asn Leu Leu Met Ala Asn Leu

| | | |
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| 210 | 215 | 220 |
| Leu Lys Arg Ser Gln Asn Ser Ala Phe Leu Asp Ile Gly Asp Glu Asn | | |
| 225 | 230 | 235 |
| Glu Ile Gln Leu Ser Lys Ser Asp Val Val Leu Ser Phe Thr Leu Glu | | |
| 245 | 250 | 255 |
| Ile Val Ile Met Glu Val Gln Gly Leu Lys Ser Val Ala Pro Asn Arg | | |
| 260 | 265 | 270 |
| Ile Val Tyr Cys Thr Met Glu Val Glu Gly Glu Lys Leu Gln Thr Asp | | |
| 275 | 280 | 285 |
| Gln Ala Glu Ala Ser Arg Pro Gln Trp Gly Asp Ser Gly Glu Phe His | | |
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| Pro | | |
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<210> 4603

<211> 2090

<212> DNA

<213> Homo sapiens

<400> 4603

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960

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 2090

<210> 4604

<211> 666

<212> PRT

<213> Homo sapiens

<400> 4604

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asp | Leu | Asp | Cys | Tyr | Phe | Thr | Pro | Met | Lys | Pro | Glu | Ser | Leu | Glu | Asn |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Ile | Leu | Asp | Ser | Leu | Glu | Pro | Gln | Ser | Leu | Ala | Ser | Leu | Leu | Ser |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Glu | Ser | Glu | Ser | Pro | Gln | Glu | Ala | Gly | Arg | Gly | His | Pro | Ser | Phe | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Pro | Gln | Gln | Lys | Glu | Ser | Ser | Glu | Ala | Ser | Glu | Leu | Ile | Leu | Tyr | Ser |

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 Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln Gly Asp Ser Tyr Leu
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 Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser Pro Pro Glu Asp Ser
 115 120 125
 Gly Glu Ser Glu Ala Asp Leu Glu Cys Ser Phe Ala Ala Ile His Ser
 130 135 140
 Pro Ala Pro Pro Pro Asp Pro Ala Pro Arg Phe Ala Thr Ser Leu Pro
 145 150 155 160
 His Phe Pro Gly Cys Ala Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro
 165 170 175
 Glu Gly Pro Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln
 180 185 190
 Glu Lys Phe Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys
 195 200 205
 Arg Ala Leu Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe
 210 215 220
 Asn Pro Arg Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys
 225 230 235 240
 Ala Ser Arg Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu
 245 250 255
 Val Lys Ser Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro
 260 265 270
 Arg Ala Gly Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Val Leu Ala
 275 280 285
 Ala Gly Lys Ala Glu Glu Thr Leu Glu Ala Trp Arg Pro Pro Pro Pro
 290 295 300
 Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser Ser Val Leu Pro
 305 310 315 320
 Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro Thr Pro Gly Leu
 325 330 335
 Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr Met Glu Ala Thr
 340 345 350
 Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser Leu Gly Asp Ser
 355 360 365
 Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu Arg Arg Pro Ser
 370 375 380
 Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu Gln Ala Ile Thr
 385 390 395 400
 Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln Glu Pro Ala Leu
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 Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu Arg Leu Thr Leu
 420 425 430
 Ser Ser Ala Cys Asp Gly Leu Leu Leu Pro Pro Val Asp Thr Gln Pro
 435 440 445
 Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro Ser Pro Val Glu
 450 455 460
 Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg Pro Ser Leu Pro
 465 470 475 480
 Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser Asn Pro Gln Leu
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 Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala Ser Leu Leu Glu

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 500 | | 505 | | 510 | | | | | | | | | | |
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| Ser | Glu | Pro | Trp | Val | Pro | Val | Glu | Ala | Leu | Pro | Pro | Ser | Pro | Leu | Glu |
| | 530 | | | | | | 535 | | | | | 540 | | | |
| Leu | Ser | Gly | Trp | Gly | Thr | Ser | Cys | Thr | Gly | Cys | Arg | Pro | Pro | Ser | Lys |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 |
| Lys | Pro | Ser | Thr | Phe | Thr | Val | Cys | Trp | Ser | Pro | Val | Ala | Arg | Trp | Thr |
| | | | 565 | | | | | | 570 | | | | | 575 | |
| Pro | Gly | Ser | Ser | Arg | His | Gly | Leu | Ser | Trp | Ser | Pro | Pro | Ser | Cys | Gly |
| | | 580 | | | | | | 585 | | | | | 590 | | |
| Ser | Thr | Ala | Ser | Trp | Arg | Leu | Asn | Ala | Trp | Trp | Gly | Leu | Val | Trp | Pro |
| | 595 | | | | | 600 | | | | | | 605 | | | |
| Gln | Pro | Arg | Leu | Cys | Pro | Ala | Gln | Asp | Pro | Arg | Pro | His | Arg | Arg | Cys |
| | 610 | | | | | 615 | | | | | | 620 | | | |
| Thr | Pro | Trp | Pro | Ala | Gln | Thr | Cys | Arg | Pro | Cys | Trp | Asn | Thr | Thr | Arg |
| 625 | | | | | 630 | | | | | 635 | | | | | 640 |
| Ser | Cys | Trp | Cys | Arg | Pro | Cys | Gly | Gly | Arg | His | Gly | Gly | Thr | Glu | Gly |
| | | | 645 | | | | | | 650 | | | | | 655 | |
| Ala | Ala | Pro | Pro | Pro | Gln | Pro | Cys | Cys | Phe | | | | | | |
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<210> 4605

<211> 2998

<212> DNA

<213> Homo sapiens

<400> 4605

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<210> 4606

<211> 584

<212> PRT

<213> Homo sapiens

<400> 4606

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| Ile | Glu | His | Lys | Glu | Asn | Asp | His | Lys | Val | Phe | Tyr | Gly | Gly | Asp |
| 1 | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Lys | Val | Asp | Cys | Val | Ala | Thr | Gly | Leu | Pro | Asn | Pro | Glu | Ile |
| | | | 20 | | | | | 25 | | | | | 30 | Ser |
| Trp | Ser | Leu | Pro | Asp | Gly | Ser | Leu | Val | Asn | Ser | Phe | Met | Gln | Ser |
| | | | 35 | | | | 40 | | | | | 45 | | Asp |
| Asp | Ser | Gly | Gly | Arg | Thr | Lys | Arg | Tyr | Val | Val | Phe | Asn | Asn | Gly |
| | | | 50 | | | | 55 | | | | 60 | | | Thr |
| Leu | Tyr | Phe | Asn | Glu | Val | Gly | Met | Arg | Glu | Glu | Gly | Asp | Tyr | Thr |
| | | | | | | 70 | | | | 75 | | | | 80 |
| Phe | Ala | Glu | Asn | Gln | Val | Gly | Lys | Asp | Glu | Met | Arg | Val | Arg | Val |
| | | | | | | | | | | 90 | | | 95 | Lys |
| Val | Val | Thr | Ala | Pro | Ala | Thr | Ile | Arg | Asn | Lys | Thr | Cys | Leu | Ala |
| | | | | | | | | | | 105 | | | 110 | Val |
| Gln | Val | Pro | Tyr | Gly | Asp | Val | Val | Thr | Val | Ala | Cys | Glu | Ala | Lys |
| | | | | | | | | | | | | 125 | | Gly |
| Glu | Pro | Met | Pro | Lys | Val | Thr | Trp | Leu | Ser | Pro | Thr | Asn | Lys | Val |
| | | | | | | | | | | | | 140 | | Ile |
| Pro | Thr | Ser | Ser | Glu | Lys | Tyr | Gln | Ile | Tyr | Gln | Asp | Gly | Thr | Leu |
| | | | | | | | | | | | | | | 160 |
| Ile | Gln | Lys | Ala | Gln | Arg | Ser | Asp | Ser | Gly | Asn | Tyr | Thr | Cys | Leu |
| | | | | | | | | | | | | | | 175 |
| Arg | Asn | Ser | Ala | Gly | Glu | Asp | Arg | Lys | Thr | Val | Trp | Ile | His | Val |
| | | | | | | | | | | | | | | 190 |
| Val | Gln | Pro | Pro | Lys | Ile | Asn | Gly | Asn | Pro | Asn | Pro | Ile | Thr | Thr |
| | | | | | | | | | | | | | | 205 |
| Arg | Glu | Ile | Ala | Ala | Gly | Gly | Ser | Arg | Lys | Leu | Ile | Asp | Cys | Lys |
| | | | | | | | | | | | | | | Ala |

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Val Leu Pro Ala Pro Tyr Tyr Gly Asn Arg Ile Thr Val His Gly Asn
      245              250              255
Gly Ser Leu Asp Ile Arg Ser Leu Arg Lys Ser Asp Ser Val Gln Leu
      260              265              270
Val Cys Met Ala Arg Asn Glu Gly Glu Ala Arg Leu Ile Leu Gln
      275              280              285
Leu Thr Val Leu Glu Pro Met Glu Lys Pro Ile Phe His Asp Pro Ile
      290              295              300
Ser Glu Lys Ile Thr Ala Met Ala Gly His Thr Ile Ser Leu Asn Cys
305              310              315              320
Ser Ala Ala Gly Thr Pro Thr Pro Ser Leu Val Trp Val Leu Pro Asn
      325              330              335
Gly Thr Asp Leu Gln Ser Gly Gln Gln Leu Gln Arg Phe Tyr His Lys
      340              345              350
Ala Asp Gly Met Leu His Ile Ser Gly Leu Ser Ser Val Asp Ala Gly
      355              360              365
Ala Tyr Arg Cys Val Ala Arg Asn Ala Ala Gly His Thr Glu Arg Leu
      370              375              380
Val Ser Leu Lys Val Gly Leu Lys Pro Glu Ala Asn Lys Gln Tyr His
385              390              395              400
Asn Leu Val Ser Ile Ile Asn Gly Glu Thr Leu Lys Leu Pro Cys Thr
      405              410              415
Pro Pro Gly Ala Gly Gln Gly Arg Phe Ser Trp Thr Leu Pro Asn Gly
      420              425              430
Met His Leu Glu Gly Pro Gln Thr Leu Gly Arg Val Ser Leu Leu Asp
      435              440              445
Asn Gly Thr Leu Thr Val Arg Glu Ala Ser Val Phe Asp Arg Gly Thr
      450              455              460
Tyr Val Cys Arg Met Glu Thr Glu Tyr Gly Pro Ser Val Thr Ser Ile
465              470              475              480
Pro Val Ile Val Ile Ala Tyr Pro Pro Arg Ile Thr Ser Glu Pro Thr
      485              490              495
Pro Val Ile Tyr Thr Arg Pro Gly Asn Thr Val Lys Leu Asn Cys Met
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Ala Met Gly Ile Pro Lys Ala Asp Ile Thr Trp Glu Leu Pro Asp Lys
      515              520              525
Ser His Leu Lys Ala Gly Val Gln Ala Arg Leu Tyr Gly Asn Arg Phe
      530              535              540
Leu His Pro Gln Gly Ser Leu Thr Ile Gln His Ala Thr Gln Arg Asp
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<210> 4607

<211> 456

<212> DNA

<213> Homo sapiens

<400> 4607

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<210> 4608

<211> 107

<212> PRT

<213> Homo sapiens

<400> 4608

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| Val | Val | Arg | Asn | Lys | Pro | Val | Ala | Arg | Gln | Ala | Pro | Gly | Lys | Arg | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Cys | Asn | Cys | Arg | Gln | Glu | Met | Arg | Thr | Thr | Gln | Leu | Gly | Pro | Gly | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Gln | Met | Thr | Gln | Glu | Val | Val | Cys | Asp | Glu | Cys | Pro | Asn | Val | Lys |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Leu | Val | Asn | Glu | Glu | Arg | Thr | Leu | Glu | Val | Glu | Ile | Glu | Pro | Gly | Val |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Arg | Asp | Gly | Met | Glu | Tyr | Pro | Phe | Ile | Gly | Glu | Gly | Glu | Pro | His | Val |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Gly | Xaa | Pro | Gly | Asp | Leu | Arg | Phe | Arg | Ile | Lys | Val | Val | Lys | His |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Pro | Ile | Phe | Glu | Arg | Arg | Gly | Asp | Asp | Leu | Tyr | | | | | |
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<210> 4609

<211> 904

<212> DNA

<213> Homo sapiens

<400> 4609

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<210> 4610
 <211> 250
 <212> PRT
 <213> Homo sapiens

<400> 4610
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 35 40 45
 Gly Gly Thr Lys Val Pro Leu Glu Ala Arg Pro Val Arg Phe Leu Asp
 50 55 60
 Asn Phe Ser Ser Gly Arg Arg Gly Ala Thr Ser Ala Glu Ala Phe Leu
 65 70 75 80
 Ala Ala Gly Tyr Gly Val Leu Phe Leu Tyr Arg Ala Arg Ser Ala Phe
 85 90 95
 Pro Tyr Ala His Arg Phe Pro Pro Gln Thr Trp Leu Ser Ala Leu Arg
 100 105 110
 Pro Ser Gly Pro Ala Leu Ser Gly Leu Leu Ser Leu Glu Ala Glu Glu
 115 120 125
 Asn Ala Leu Pro Gly Phe Ala Glu Ala Leu Arg Ser Tyr Gln Glu Ala
 130 135 140
 Ala Ala Ala Gly Thr Phe Leu Ala Val Glu Phe Thr Thr Leu Ala Asp
 145 150 155 160
 Tyr Leu His Leu Leu Gln Ala Ala Ala Gln Ala Leu Asn Pro Leu Gly
 165 170 175
 Pro Ser Ala Met Phe Tyr Leu Ala Ala Val Ser Asp Phe Tyr Val
 180 185 190
 Pro Val Ser Glu Met Pro Glu His Lys Ile Gln Ser Ser Gly Gly Pro

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| | 195 | | | | | 200 | | | | | | 205 | | | | | | | |
| Leu | Gln | Gly | Lys | Val | Gln | Leu | Glu | Asp | Ile | Leu | His | His | Leu | Glu | Lys | | | | |
| | 210 | | | | | | 215 | | | | | 220 | | | | | | | |
| Glu | Glu | Ile | Asn | Pro | Leu | Ala | Thr | Thr | Glu | Glu | Gln | Leu | Cys | Leu | Val | | | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | | | |
| Leu | Ile | Pro | Ala | Ser | Thr | Val | Lys | Thr | Gly | | | | | | | | | | |
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<210> 4611

<211> 1946

<212> DNA

<213> Homo sapiens

<400> 4611

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1200

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 1920
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 1946

<210> 4612

<211> 532

<212> PRT

<213> Homo sapiens

<400> 4612

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Lys | Pro | Ala | Pro | Ser | Ser | Gln | Arg | Lys | Pro | Pro | Ala | Arg | Pro | Ser | Ala |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Ala | Ala | Ala | Ala | Ile | Ala | Val | Ala | Ala | Ala | Glu | Glu | Glu | Arg | Arg | Leu |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Arg | Gln | Arg | Asn | Arg | Leu | Arg | Leu | Glu | Glu | Asp | Lys | Pro | Ala | Val | Glu |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Arg | Cys | Leu | Glu | Glu | Leu | Val | Phe | Gly | Asp | Val | Glu | Asn | Asp | Glu | Asp |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Ala | Leu | Leu | Arg | Arg | Leu | Arg | Gly | Pro | Arg | Val | Gln | Glu | His | Glu | Asp |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Ser | Gly | Asp | Ser | Glu | Val | Glu | Asn | Glu | Ala | Lys | Gly | Asn | Phe | Pro | Pro |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Gln | Lys | Lys | Pro | Val | Trp | Val | Asp | Glu | Glu | Asp | Glu | Asp | Glu | Glu | Met |
| | | 115 | | | | | 120 | | | | 125 | | | | |
| Val | Asp | Met | Met | Asn | Asn | Arg | Phe | Arg | Lys | Asp | Met | Met | Lys | Asn | Ala |
| | 130 | | | | 135 | | | | | 140 | | | | | |
| Ser | Glu | Ser | Lys | Leu | Ser | Lys | Asp | Asn | Leu | Lys | Lys | Arg | Leu | Lys | Glu |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Glu | Phe | Gln | His | Ala | Met | Gly | Gly | Val | Pro | Ala | Trp | Ala | Glu | Thr | Thr |

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 195 200 205
 Arg Gly Ile Leu Lys Met Lys Asn Cys Gln His Ala Asn Ala Glu Arg
 210 215 220
 Pro Thr Val Ala Arg Ile Ser Ser Val Gln Phe His Pro Gly Ala Gln
 225 230 235 240
 Ile Val Met Val Ala Gly Leu Asp Asn Ala Val Ser Leu Phe Gln Val
 245 250 255
 Asp Gly Lys Thr Asn Pro Lys Ile Gln Ser Ile Tyr Leu Glu Arg Phe
 260 265 270
 Pro Ile Phe Lys Ala Cys Phe Ser Ala Asn Gly Glu Glu Val Leu Ala
 275 280 285
 Thr Ser Thr His Ser Lys Val Leu Tyr Val Tyr Asp Met Leu Ala Gly
 290 295 300
 Lys Leu Ile Pro Val His Gln Val Arg Gly Leu Lys Glu Lys Ile Val
 305 310 315 320
 Arg Ser Phe Glu Val Ser Pro Asp Gly Ser Phe Leu Leu Ile Asn Gly
 325 330 335
 Ile Ala Gly Tyr Leu His Leu Leu Ala Met Lys Thr Lys Glu Leu Ile
 340 345 350
 Gly Ser Met Lys Ile Asn Gly Arg Val Ala Ala Ser Thr Phe Ser Ser
 355 360 365
 Asp Ser Lys Lys Val Tyr Ala Ser Ser Gly Asp Gly Glu Val Tyr Val
 370 375 380
 Trp Asp Val Asn Ser Arg Lys Cys Leu Asn Arg Phe Val Asp Glu Gly
 385 390 395 400
 Ser Leu Tyr Gly Leu Ser Ile Ala Thr Ser Arg Asn Gly Gln Tyr Val
 405 410 415
 Ala Cys Gly Ser Asn Cys Gly Val Val Asn Ile Tyr Asn Gln Asp Ser
 420 425 430
 Cys Leu Gln Glu Thr Asn Pro Lys Pro Ile Lys Ala Ile Met Asn Leu
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 450 455 460
 Ala Ile Ala Ser Glu Lys Met Lys Glu Ala Val Arg Leu Val His Leu
 465 470 475 480
 Pro Ser Cys Thr Val Phe Ser Asn Phe Pro Val Ile Lys Asn Lys Asn
 485 490 495
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 Tyr Ser Asp Phe
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<211> 454

<212> DNA

<213> Homo sapiens

<400> 4613

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<210> 4614

<211> 117

<212> PRT

<213> Homo sapiens

<400> 4614

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| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Pro | Val | Thr | Cys | Leu | Ala | Pro | Thr | Ser | Asn | Glu | Phe | Thr | Arg | Gly | Asn |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Phe | Thr | Asn | Gly | Asn | Leu | Thr | Met | Ser | Asn | Glu | Phe | His | Cys | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Asp | Phe | Leu | Ile | Phe | Thr | Thr | Gln | Ile | Leu | Thr | Ile | Leu | Gln | Leu | Arg |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Ser | Leu | Asn | Ile | Ile | Tyr | Asn | Lys | Gln | Asn | Leu | Val | Asn | Leu | Gln | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ser | Asn | Ala | Leu | Lys | Lys | His | Gln | Ser | Leu | Cys | Met | Cys | Arg | Thr | Asp |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Pro | Ala | Pro | Gln | Gly | Asn | Thr | Ala | Gly | Thr | Val | Pro | Arg | Thr | Leu | Thr |
| | | | 100 | | | | | 105 | | | | | | 110 | |
| Ser | Val | Ser | Leu | Leu | | | | | | | | | | | |
| | | | 115 | | | | | | | | | | | | |

<210> 4615

<211> 1350

<212> DNA

<213> Homo sapiens

<400> 4615

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<210> 4616

<211> 188

<212> PRT

<213> Homo sapiens

<400> 4616

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Pro | Leu | Ser | Pro | Pro | Leu | Val | Glu | Asp | Ser | Ala | Phe | Glu | Pro | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Lys | Asp | Met | Asp | Glu | Val | Glu | Glu | Lys | Ser | Lys | Asp | Val | Ile | Asn |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Phe | Thr | Ala | Glu | Lys | Leu | Ser | Val | Asp | Glu | Val | Ser | Gln | Leu | Val | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ser | Pro | Leu | Cys | Gly | Ala | Ile | Ser | Leu | Phe | Val | Gly | Thr | Thr | Arg | Asn |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asn | Phe | Glu | Gly | Lys | Lys | Val | Ile | Ser | Leu | Glu | Tyr | Glu | Ala | Tyr | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Pro | Met | Ala | Glu | Asn | Glu | Val | Arg | Lys | Ile | Cys | Ser | Asp | Ile | Arg | Gln |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Lys | Trp | Pro | Val | Lys | His | Ile | Ala | Val | Phe | His | Leu | Leu | Gly | Leu | Val |
| | | 115 | | | | 120 | | | | | 125 | | | | |
| Pro | Val | Ser | Glu | Ala | Ser | Thr | Val | Ile | Ala | Val | Ser | Ser | Ala | His | Arg |
| | 130 | | | | 135 | | | | | | 140 | | | | |
| Ala | Ala | Ser | Leu | Glu | Ala | Val | Ser | Tyr | Ala | Ile | Asp | Ser | Leu | Lys | Ala |
| 145 | | | | 150 | | | | 155 | | | | | | 160 | |
| Lys | Val | Pro | Ile | Trp | Lys | Lys | Glu | Ile | Tyr | Glu | Glu | Ser | Ser | Thr | Trp |
| | | | 165 | | | | 170 | | | | | | | 175 | |
| Lys | Gly | Asn | Lys | Glu | Cys | Phe | Trp | Ala | Ser | Asn | Ser | | | | |
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<211> 2266

<212> DNA

<213> Homo sapiens

<400> 4617

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<212> PRT

<213> Homo sapiens

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<213> Homo sapiens
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<400> 4620

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      20           25           30
Leu Gln Ala Arg Pro Asn Pro Arg Phe Pro Gly Arg Cys Thr Pro Gly
      35           40           45
Trp Glu Lys Leu Thr Asn Glu Ser Ser Trp Gln Pro Pro Gln Ala Pro
      50           55           60
Pro Asp Trp Ala Ser Trp Leu Cys Cys Gln Asp Tyr Asp Pro Leu Pro
      65           70           75           80
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<210> 4621

<211> 2588

<212> DNA

<213> Homo sapiens

<400> 4621

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<211> 403
<212> PRT
<213> Homo sapiens

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Ala Arg Ile Thr Ile Ser Glu Gly Ser Cys Pro Glu Arg Ile Thr Thr
50 55 60
Ile Thr Gly Ser Thr Ala Ala Val Phe His Ala Val Ser Met Ile Ala
65 70 75 80
Phe Lys Leu Asp Glu Asp Leu Cys Ala Ala Pro Ala Asn Gly Gly Asn
85 90 95
Val Ser Arg Pro Pro Val Thr Leu Arg Leu Val Ile Pro Ala Ser Gln
100 105 110
Cys Gly Ser Leu Ile Gly Lys Ala Gly Thr Lys Ile Lys Glu Ile Arg
115 120 125
Glu Thr Thr Gly Ala Gln Val Gln Val Ala Gly Asp Leu Leu Pro Asn
130 135 140
Ser Thr Glu Arg Ala Val Thr Val Ser Gly Val Pro Asp Ala Ile Ile
145 150 155 160
Leu Cys Val Arg Gln Ile Cys Ala Val Ile Leu Glu Ser Pro Pro Lys
165 170 175
Gly Ala Thr Ile Pro Tyr His Pro Ser Leu Ser Leu Gly Thr Val Leu
180 185 190
Leu Ser Ala Asn Gln Gly Phe Ser Val Gln Gly Gln Tyr Gly Ala Val
195 200 205
Thr Pro Ala Glu Val Thr Lys Leu Gln Gln Leu Ser Ser His Ala Val
210 215 220
Pro Phe Ala Thr Pro Ser Val Val Pro Gly Leu Asp Pro Gly Thr Gln
225 230 235 240
Thr Ser Ser Gln Glu Phe Leu Val Pro Asn Asp Leu Ile Gly Cys Val
245 250 255
Ile Gly Arg Gln Gly Ser Lys Ile Ser Glu Ile Arg Gln Met Ser Gly
260 265 270
Ala His Ile Lys Ile Gly Asn Gln Ala Glu Gly Ala Gly Glu Arg His
275 280 285
Val Thr Ile Thr Gly Ser Pro Val Ser Ile Ala Leu Ala Gln Tyr Leu
290 295 300
Ile Thr Ala Cys Leu Glu Thr Ala Lys Ser Thr Ser Gly Gly Thr Pro
305 310 315 320
Gly Ser Ala Pro Ala Asp Leu Pro Thr Pro Phe Ser Pro Pro Leu Thr
325 330 335
Ala Leu Pro Thr Ala Pro Pro Gly Leu Leu Gly Thr Pro Tyr Ala Ile
340 345 350
Ser Leu Ser Asn Phe Ile Gly Leu Lys Pro Val Pro Phe Leu Ala Leu

| | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|
| | 355 | | 360 | | 365 | |
| Pro | Pro | Ala | Ser | Pro | Gly | Pro |
| | | | | Pro | Pro | Pro |
| | | | | Gly | Leu | Ala |
| | | | | Ala | Ala | Tyr |
| | | | | Thr | Ala | |
| | 370 | | | 375 | | 380 |
| Lys | Met | Ala | Ala | Ala | Asn | Gly |
| | | | | Ser | Lys | Lys |
| | | | | Ala | Glu | Arg |
| | | | | Gln | Lys | Phe |
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<210> 4623

<211> 2220

<212> DNA

<213> Homo sapiens

<400> 4623

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<210> 4624

<211> 189

<212> PRT

<213> Homo sapiens

<400> 4624

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| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Leu | Lys | Arg | Lys | Lys | Lys | Lys | Lys | Arg | Lys | Glu | Ser | Gly | Val | Ala | Gly |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asp | Pro | Trp | Lys | Glu | Glu | Thr | Asp | Thr | Asp | Leu | Glu | Val | Val | Leu | Glu |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Lys | Lys | Gly | Asn | Met | Asp | Glu | Ala | His | Ile | Asp | Gln | Val | Arg | Arg | Lys |
| | | | 50 | | | | 55 | | | | 60 | | | | |
| Ala | Leu | Gln | Glu | Glu | Ile | Asp | Arg | Glu | Ser | Gly | Lys | Thr | Glu | Ala | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Glu | Thr | Arg | Lys | Trp | Thr | Gly | Thr | Gln | Phe | Gly | Gln | Trp | Asp | Thr | Ala |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Phe | Glu | Asn | Glu | Asp | Gln | Lys | Leu | Lys | Phe | Leu | Arg | Leu | Met | Gly |

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<210> 4626
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 <212> PRT
 <213> Homo sapiens

<400> 4626
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 35 40 45
 Arg Leu Gln Arg Gln Leu Gln Gln Glu His Ala Tyr Leu Lys Ser Leu
 50 55 60
 Gln Gln Gln Gln Gln Gln Gln Gln Leu Gln Lys Gln Gln Gln Gln
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<210> 4627
 <211> 1736

<212> DNA

<213> Homo sapiens

<400> 4627

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<210> 4628

<211> 469

<212> PRT

<213> Homo sapiens

<400> 4628

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Thr | Val | His | Ala | Arg | Ser | Leu | Glu | Pro | Leu | Pro | Ser | Ser | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Asp | Phe | Gly | Gly | Leu | Gly | Glu | Glu | Ala | Glu | Phe | Val | Glu | Val | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Glu | Ala | Lys | Gln | Glu | Ile | Leu | Glu | Asn | Lys | Asp | Val | Val | Val | Gln |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| His | Val | His | Phe | Asp | Gly | Leu | Gly | Arg | Thr | Lys | Asp | Asp | Ile | Ile | Ile |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Cys | Glu | Ile | Gly | Asp | Val | Phe | Lys | Ala | Lys | Asn | Leu | Ile | Glu | Val | Met |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Arg | Lys | Ser | His | Glu | Ala | Arg | Glu | Lys | Leu | Leu | Arg | Leu | Gly | Ile | Phe |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Arg | Gln | Val | Asp | Val | Leu | Ile | Asp | Thr | Cys | Gln | Gly | Asp | Gly | Ala | Leu |
| | | | 100 | | | | | 105 | | | | | | 110 | |
| Pro | Asn | Gly | Leu | Asp | Val | Thr | Phe | Glu | Val | Thr | Glu | Leu | Arg | Arg | Leu |
| | | | 115 | | | | | 120 | | | | | | 125 | |
| Thr | Gly | Ser | Tyr | Asn | Thr | Met | Val | Gly | Asn | Asn | Glu | Gly | Ser | Met | Val |
| | | | 130 | | | | 135 | | | | | 140 | | | |
| Leu | Gly | Leu | Lys | Leu | Pro | Asn | Leu | Leu | Gly | Arg | Ala | Glu | Lys | Val | Thr |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Phe | Gln | Phe | Ser | Tyr | Gly | Thr | Lys | Glu | Thr | Ser | Tyr | Gly | Leu | Ser | Phe |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Phe | Lys | Pro | Arg | Pro | Gly | Asn | Phe | Glu | Arg | Asn | Phe | Ser | Val | Asn | Leu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Tyr | Lys | Val | Thr | Gly | Gln | Phe | Pro | Trp | Ser | Ser | Leu | Arg | Glu | Thr | Asp |
| | | | 195 | | | | 200 | | | | | | 205 | | |
| Arg | Gly | Met | Ser | Ala | Glu | Tyr | Ser | Phe | Pro | Ile | Trp | Lys | Thr | Ser | His |
| | | | 210 | | | | 215 | | | | | | 220 | | |
| Thr | Val | Lys | Trp | Glu | Gly | Val | Trp | Arg | Glu | Leu | Gly | Cys | Leu | Ser | Arg |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Thr | Ala | Ser | Phe | Ala | Val | Arg | Lys | Glu | Ser | Gly | His | Ser | Leu | Lys | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Ser | Leu | Ser | His | Ala | Met | Val | Ile | Asp | Ser | Arg | Asn | Ser | Ser | Ile | Leu |
| | | | 260 | | | | | 265 | | | | | | 270 | |
| Pro | Arg | Arg | Gly | Ala | Leu | Leu | Lys | Val | Asn | Gln | Glu | Leu | Ala | Gly | Tyr |
| | | | 275 | | | | 280 | | | | | | 285 | | |
| Thr | Gly | Gly | Asp | Val | Ser | Phe | Ile | Lys | Glu | Asp | Phe | Glu | Leu | Gln | Leu |
| | | | 290 | | | | 295 | | | | | 300 | | | |
| Asn | Lys | Gln | Leu | Ile | Phe | Asp | Ser | Val | Phe | Ser | Ala | Ser | Phe | Trp | Gly |

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<210> 4629
<211> 706
<212> DNA
<213> Homo sapiens
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<210> 4630

<211> 140
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ser Trp Ala Leu Arg Val Ser Val Phe Pro Gln Ile Gly Lys Met Arg
 50 55 60
 Gly Arg Gly Gly Tyr Trp Gly Gln Ala Ser Ala Gln Pro Trp Val Leu
 65 70 75 80
 Leu Glu Pro Gly Leu Glu Pro Glu Val Gly Arg Val Ser Lys Leu Ser
 85 90 95
 Ser Trp Ile Pro Ile Cys Arg Thr Ala Pro Arg Thr Arg Ser Gly Val
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 130 135 140

<210> 4631
 <211> 2756
 <212> DNA
 <213> Homo sapiens

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 2640
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<210> 4632

<211> 372

<212> PRT

<213> Homo sapiens

<400> 4632

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| Met | Ala | Ala | Glu | Arg | Gln | Glu | Ala | Leu | Arg | Glu | Phe | Val | Ala | Val | Thr |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Gly | Ala | Glu | Glu | Asp | Arg | Ala | Arg | Phe | Phe | Leu | Glu | Ser | Ala | Gly | Trp |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Asp | Leu | Gln | Ile | Ala | Leu | Ala | Ser | Phe | Tyr | Glu | Asp | Gly | Gly | Asp | Glu |
| | 35 | | | | | 40 | | | | | | 45 | | | |
| Asp | Ile | Val | Thr | Ile | Ser | Gln | Ala | Thr | Pro | Ser | Ser | Val | Ser | Arg | Gly |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Thr | Ala | Pro | Ser | Asp | Asn | Arg | Val | Thr | Ser | Phe | Arg | Asp | Leu | Ile | His |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Gln | Asp | Glu | Asp | Glu | Glu | Glu | Glu | Glu | Gly | Gln | Arg | Ser | Arg | Phe |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Tyr | Ala | Gly | Gly | Ser | Glu | Arg | Ser | Gly | Gln | Gln | Ile | Val | Gly | Pro | Pro |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Arg | Lys | Lys | Ser | Pro | Asn | Glu | Leu | Val | Asp | Asp | Leu | Phe | Lys | Gly | Ala |
| | 115 | | | | | 120 | | | | | 125 | | | | |
| Lys | Glu | His | Gly | Ala | Val | Ala | Val | Glu | Arg | Val | Thr | Lys | Ser | Pro | Gly |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Glu | Thr | Ser | Lys | Pro | Arg | Pro | Phe | Ala | Gly | Gly | Gly | Tyr | Arg | Leu | Gly |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Ala | Ala | Pro | Glu | Glu | Glu | Ser | Ala | Tyr | Val | Ala | Gly | Glu | Lys | Arg | Gln |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| His | Ser | Ser | Gln | Asp | Val | His | Val | Val | Leu | Lys | Leu | Trp | Lys | Ser | Gly |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Phe | Ser | Leu | Asp | Asn | Gly | Glu | Leu | Arg | Ser | Tyr | Gln | Asp | Pro | Ser | Asn |
| | 195 | | | | | 200 | | | | | 205 | | | | |
| Ala | Gln | Phe | Leu | Glu | Ser | Ile | Arg | Arg | Gly | Glu | Val | Pro | Ala | Glu | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Arg | Arg | Leu | Ala | His | Gly | Gly | Gln | Val | Asn | Leu | Asp | Met | Glu | Asp | His |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Asp | Glu | Asp | Phe | Val | Lys | Pro | Lys | Gly | Ala | Phe | Lys | Ala | Phe | Thr |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Gly | Glu | Gly | Gln | Lys | Leu | Gly | Ser | Thr | Ala | Pro | Gln | Val | Leu | Ser | Thr |

| | | | | | |
|-------------|-----------------|---------------------|---------------------|-----|-----|
| | 260 | | 265 | | 270 |
| Ser Ser Pro | Ala Gln Gln Ala | Glu Asn Glu Ala Lys | Ala Ser Ser Ser | | |
| | 275 | | 280 | | 285 |
| Ile Leu Ile | Asp Glu Ser Glu | Pro Thr Thr Asn | Ile Gln Ile Arg Leu | | |
| | 290 | | 295 | | 300 |
| Ala Asp Gly | Gly Arg Leu Val | Gln Lys Phe Asn His | Ser His Arg Ile | | |
| 305 | | 310 | | 315 | 320 |
| Ser Asp Ile | Arg Leu Phe Ile | Val Asp Ala Arg | Pro Ala Met Ala | | |
| | 325 | | 330 | | 335 |
| Thr Ser Phe | Ile Leu Met Thr | Thr Phe Pro Asn | Lys Glu Leu Ala | | |
| | 340 | | 345 | | 350 |
| Glu Ser Gln | Thr Leu Lys Glu | Ala Asn Leu Leu | Asn Ala Val Ile | | |
| | 355 | | 360 | | 365 |
| Gln Arg Leu | Thr | | | | |
| | 370 | | | | |

<210> 4633
 <211> 873
 <212> DNA
 <213> Homo sapiens

<400> 4633
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 780
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 873

<210> 4634

<211> 242
 <212> PRT
 <213> Homo sapiens

<400> 4634

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 20             25             30
Ala Asn Leu Gly Lys Phe Leu Glu Leu Leu Arg Ser His Gln Ser Arg
 35             40             45
Pro Ala Lys Cys Leu Thr Ile Met Trp Ala Leu Gly Gln Ala Gly Phe
 50             55             60
Ala Asn Leu Thr Glu Gly Leu Lys Val Trp Leu Gly Ile Met Leu Pro
 65             70             75             80
Val Leu Gly Ile Lys Ser Leu Ser Pro Phe Ala Ile Thr Tyr Leu Asp
 85             90             95
Arg Leu Leu Leu Met His Pro Asn Leu Thr Lys Gly Phe Gly Met Ile
100            105            110
Gly Pro Lys Asp Phe Phe Pro Leu Leu Asp Phe Ala Tyr Met Pro Asn
115            120            125
Asn Ser Leu Thr Pro Ser Leu Gln Glu Gln Leu Cys Gln Leu Tyr Pro
130            135            140
Arg Leu Lys Val Leu Ala Phe Gly Ala Lys Pro Asp Ser Thr Leu His
145            150            155            160
Thr Tyr Phe Pro Ser Phe Leu Ser Arg Ala Thr Pro Ser Cys Pro Pro
165            170            175
Glu Met Lys Lys Glu Leu Leu Ser Ser Leu Thr Glu Cys Leu Thr Val
180            185            190
Asp Pro Leu Ser Ala Ser Val Trp Arg Gln Leu Tyr Pro Lys His Leu
195            200            205
Ser Gln Ser Ser Leu Leu Leu Glu His Leu Leu Ser Ser Trp Glu Gln
210            215            220
Ile Pro Lys Lys Val Gln Lys Ser Leu Gln Glu Thr Ile Gln Ser Leu
225            230            235            240
Lys Leu

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<210> 4635
 <211> 384
 <212> DNA
 <213> Homo sapiens

<400> 4635

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180
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240
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300

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 384

<210> 4636
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 4636
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 35 40 45
 Glu Pro Ala Ser Gly Gly Leu Pro Pro Pro Glu Asp Glu Phe Cys Ser
 50 55 60
 Pro Gly Val Cys Thr Leu Thr Leu Ala His Ser Leu Thr His Lys Thr
 65 70 75 80
 Leu Thr Leu Cys Phe Phe Trp Gly Glu Gly Gly His Trp Gln Lys Arg
 85 90 95
 Leu Pro Trp Pro Gln Ser Val Pro Ile Leu Ile Phe
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<210> 4637
 <211> 2162
 <212> DNA
 <213> Homo sapiens

<400> 4637
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 180
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<211> 446
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 <213> Homo sapiens

<400> 4638

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      50           55           60
Arg Leu Phe Ser Ser Ser Leu Val Val Val Val Ser His Thr Lys Pro
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Arg Gln Met Asn Val Tyr His Phe Lys Lys Gly Thr Glu Ile Cys Asn
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Tyr Ser Tyr Ser Ser Asn Ile Leu Ser Ile Arg Leu Asn Arg Gln Arg
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Gly Ser Leu Thr Ser Gly Glu Ile Val Leu Tyr Asp Gly Asn Ser Leu
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Lys Thr Val Cys Thr Ile Ala Ala His Glu Gly Thr Leu Ala Ala Ile
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Ser Met Asp Ser Gln Phe Leu Cys Ala Ser Ser Asn Thr Glu Thr Val
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His Ile Phe Lys Leu Glu Gln Val Thr Asn Ser Arg Pro Glu Glu Pro
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Ser Thr Ile Gln Lys Leu Pro Arg Leu Leu Val Ala Ser Ser Ser Gly
      325          330          335
His Leu Tyr Met Tyr Asn Leu Asp Pro Gln Asp Gly Gly Glu Cys Val
      340          345          350
Leu Ile Lys Thr His Ser Leu Leu Gly Ser Gly Thr Thr Glu Glu Asn
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Lys Glu Asn Asp Leu Arg Pro Ser Leu Pro Gln Ser Tyr Ala Ala Thr
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| Ala | Thr | Gly | Pro | Val | Cys | Leu | Asp | Asp | Glu | Asn | Glu | Phe | Pro | Pro | Ile |
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 Leu Arg Arg Ser Phe Ala Leu Val Ala Gln Ala Arg Val Gln Trp Arg
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 Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Arg Leu Lys Arg Phe Ser
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 His Leu Ser Leu Pro Ser Ser
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<210> 4641

<211> 1873

<212> DNA

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<211> 306

<212> PRT

<213> Homo sapiens

<400> 4642

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 Val Ala Cys Glu Leu Gly Arg Leu Tyr Asn Lys Asp Ala Val Ile Glu
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 Phe Leu Leu Asp Lys Ser Ala Glu Lys Ala Leu Gly Lys Ala Ala Ser
 65 70 75 80
 His Ile Lys Ser Ile Lys Asn Val Thr Glu Leu Lys Leu Ser Asp Asn
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 Pro Ala Trp Glu Gly Asp Lys Gly Asn Thr Lys Gly Asp Lys His Asp
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 Asp Leu Gln Arg Ala Arg Phe Ile Cys Pro Val Val Gly Leu Glu Met
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<212> DNA
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<213> Homo sapiens

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| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly | Gly | Arg | Ala |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu | Cys | Asp | Val | Thr |
| | | 50 | | | | 55 | | | | | 60 | | | | |
| Gln | Glu | Asp | Asp | Met | Lys | Thr | Leu | Val | Ser | Glu | Thr | Ile | Arg | Arg | Phe |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala | Gly | His | His | Pro | Pro | Pro |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln | Gly | Phe | Arg | Gln | Leu | Leu | Glu |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr | Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Arg | Lys | Ser | Gln | Gly | Asn | Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Ala | Ile | Gly | Gln | Ala | Gln | Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Val | Thr | Ala | Met | Thr | Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Val | Arg | Val | Asn | Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Glu | Glu | Leu | Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu |
| | | 195 | | | | 200 | | | | | | 205 | | | |
| Gly | Met | Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Gly | Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly |
| 225 | | | | | 230 | | | | | 235 | | | | 240 | |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys | Lys |
| | | | 245 | | | | | | 250 | | | | | 255 | |
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 <212> PRT
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 65 70 75 80
 Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly Glu Glu Gly Leu Lys Asp
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 Gly His Gln Ser Ser His Gly Asp Ile Phe Ser His Phe Phe Gly Asp
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 Phe Gly Phe Met Phe Gly Gly Thr Pro Arg Gln Gln Asp Arg Asn Ile
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 Pro Arg Gly Ser Asp Ile Ile Val Asp Leu Glu Val Thr Leu Glu Glu
 130 135 140
 Val Tyr Ala Gly Asn Phe Val Glu Val Val Arg Asn Lys Pro Val Ala
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 Arg Gln Ala Pro Gly Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg
 165 170 175
 Thr Thr Gln Leu Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val
 180 185 190
 Cys Asp Glu Cys Pro Asn Val Lys Leu Val Asn Glu Glu Arg Thr Leu
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 210 215 220
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 225 230 235 240
 Phe Arg Ile Lys Val Val Lys His Pro Ile Phe Glu Arg Arg Gly Asp
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<212> DNA

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<211> 188

<212> PRT

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 4650

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| Glu | Leu | Glu | Glu | Lys | Lys | Asn | Gln | Leu | Ile | Val | Glu | Ser | Ala | Lys | Asn |
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| Lys | Lys | His | Leu | Lys | Glu | Ile | Glu | Asp | Lys | Ile | Leu | Glu | Val | Leu | Ser |
| | | | 85 | | | | | 90 | | | | | 95 | | |
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<212> DNA

<213> Homo sapiens

<400> 4651

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<211> 1276

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<212> PRT

<213> Homo sapiens

<400> 4654

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| Glu | Thr | Asn | Thr | Glu | Asp | Leu | Phe | Leu | Glu | Glu | Ala | Ala | Ser | Leu | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Glu | Arg | Pro | Ser | Arg | Arg | Ala | Arg | Gly | Ser | Pro | Phe | Val | Arg | Ser |
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| Gly | Thr | Ile | Val | Arg | Ser | Gln | Thr | Phe | Ser | Pro | Gly | Ala | Arg | Ser | Gln |
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| Tyr | Val | Cys | Arg | Leu | Tyr | Arg | Ser | Asp | Ser | Asp | Ser | Ser | Thr | Leu | Pro |
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| Arg | Lys | Ser | Pro | Phe | Val | Arg | Asn | Thr | Leu | Glu | Arg | Arg | Thr | Leu | Arg |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Tyr | Lys | Gln | Ser | Cys | Arg | Ser | Ser | Leu | Ala | Glu | Leu | Met | Ala | Arg | Thr |
| | | 115 | | | | | 120 | | | | | 125 | | | |
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| | 130 | | | | | 135 | | | | | 140 | | | | |
| Gln | Leu | Asn | Glu | Glu | Leu | Cys | Ala | Leu | Arg | Glu | Leu | Arg | Gln | Arg | Leu |
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| | | | 165 | | | | | 170 | | | | | 175 | | |
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| | | 180 | | | | | 185 | | | | | 190 | | | |
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3852

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 <212> PRT
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<400> 4658
 Met Asp Lys Glu Tyr Val Gly Phe Ala Ala Leu Pro Asn Gln Leu His
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 20 25 30
 Glu Ser Gly Leu Gly Lys Ser Thr Leu Ile Asn Ser Leu Phe Leu Thr
 35 40 45
 Asn Leu Tyr Glu Asp Arg Gln Val Pro Glu Ala Ser Ala Arg Leu Thr
 50 55 60
 Gln Thr Leu Ala Ile Glu Arg Arg Gly Val Glu Ile Glu Glu Gly Gly
 65 70 75 80
 Val Lys Val Lys Leu Thr Leu Val Asp Thr Pro Gly Phe Gly Asp Ser

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      85              90              95
Val Asp Cys Ser Asp Cys Trp Leu Pro Val Val Lys Phe Ile Glu Glu
      100              105              110
Gln Phe Glu Gln Tyr Leu Arg Asp Glu Ser Gly Leu Asn Arg Lys Asn
      115              120              125
Ile Gln Asp Ser Arg Val His Cys Cys Leu Tyr Phe Ile Ser Pro Phe
      130              135              140
Gly Arg Ala Pro Ala Pro Arg Cys Gly Phe Leu Arg Ala Ile His Glu
      145              150              155              160
Lys Val Asn Ile Ile Pro Val Ile Gly Lys Ala Asp Ala Leu Met Pro
      165              170              175
Gln Glu Thr Gln Ala Leu Lys Gln Lys Ile Arg Asp Gln Leu Lys Glu
      180              185              190
Glu Glu Ile His Ile Tyr Gln Phe Pro Glu Cys Asp Ser Asp Glu Asp
      195              200              205
Glu Asp Phe Lys Arg Gln Asp Ala Glu Met Lys Glu Ser Ile Pro Phe
      210              215              220
Ala Val Val Gly Ser Cys Glu Val Val
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<210> 4659

<211> 864

<212> DNA

<213> Homo sapiens

<400> 4659

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120
ggcgccggtg gtcgttgtga cccaacctgg agtcggtccc ggtccggccc cccagaacte
180
caactggcag acaggcatgt gtgactgttt cagcgactgc ggagtctgtc tctgtggcac
240
atthttgttc ccgtgccttg ggtgtcaagt tgcagctgat atgaatgaat gctgtctgtg
300
tggaacaagc gtcgcaatga ggactctcta caggaccoga tatggcatcc ctggatctat
360
ttgtgatgac tatatggcaa ctctttgtcg tcctcattgt actctttgcc aaatcaagag
420
agatatcaac agaaggagag ccatgcgtac tttctaaaaa ctgatgggtga aaagctctta
480
ccgaagcaac aaaattcagc agacacctct tcagcttgag ttcttcacca tcttttgcaa
540
ctgaaatatg atggatatgc ttaagtacaa ctgatggcat gaaaaaaatc aaatthttga
600
tttattataa atgaatgttg tccctgaact tagctaaatg gtgcaactta gtttctcctt
660
gctttcatat tatcgaaatc gaatttcctg gcttataaac tttttaaatt acatttgaaa
720
tataaaccaa atgaaatatt ttactgataa gattcttcat gcttctttgc tctccttaaa
780
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840

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tttccttttt cttttttttt ttg
864

<210> 4660
<211> 192
<212> PRT
<213> Homo sapiens

<400> 4660
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Asp Gly Glu Glu Leu Lys Leu Lys Arg Cys Leu Leu Asn Phe Val Ala
20 25 30
Ser Val Arg Ala Phe His His Gln Phe Leu Glu Ser Thr His Gly Ser
35 40 45
Pro Ser Val Asp Ile Ser Leu Asp Leu Ala Lys Ser Thr Met Arg Thr
50 55 60
Ala Lys Ser Cys His Ile Val Ile Thr Asn Arg Ser Arg Asp Ala Ile
65 70 75 80
Ser Gly Pro Val Glu Ser Pro His Cys Asp Ala Cys Ser Thr Gln Thr
85 90 95
Ala Phe Ile His Ile Ser Cys Asn Leu Thr Pro Lys Ala Arg Glu Thr
100 105 110
Lys Cys Ala Thr Glu Thr Asp Ser Ala Val Ala Glu Thr Val Thr His
115 120 125
Ala Cys Leu Pro Val Gly Val Leu Gly Gly Arg Thr Gly Thr Asp Ser
130 135 140
Arg Leu Gly His Asn Asp His Arg Arg Leu Ser Leu His Phe Gln Cys
145 150 155 160
Arg Ala Phe His Val Val Phe Ile Cys Gly Glu Ile Leu Ser Gln Ala
165 170 175
Thr Arg His Phe Leu Leu Gly Thr Leu Phe Thr Asn Phe His Cys Phe
180 185 190

<210> 4661
<211> 153
<212> DNA
<213> Homo sapiens

<400> 4661
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aaacacagcc atgaacagag tgaccgggga gaaggggtgg aggtcgtcca gaatgagccc
120
tttgaggacc ctcaccatgg ccatgggcag ttc
153

<210> 4662
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4662
Arg Ile Cys Met Pro Leu Thr Val Asp Glu Tyr Lys Ile Gly Gln Leu

| | | | |
|---|----|----|----|
| 1 | 5 | 10 | 15 |
| Tyr Met Ile Ser Lys His Ser His Glu Gln Ser Asp Arg Gly Glu Gly | | | |
| | 20 | 25 | 30 |
| Val Glu Val Val Gln Asn Glu Pro Phe Glu Asp Pro His His Gly His | | | |
| | 35 | 40 | 45 |
| Gly Gln Phe | | | |
| 50 | | | |

<210> 4663

<211> 1550

<212> DNA

<213> Homo sapiens

<400> 4663

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120
cagacggatg acccaggccc cctcgatggc cctgacctcc aggccagcca ctcagagctc
180
caggtgccca cccctggcag agccggccta ctgaacacct ctggtaccaa aggcttagaa
240
tgttctcctt caactcccac catgaattct tacttttata agttcatgat caaccttctc
300
aagagattca gcagcgaacg gaagctcctg gaggtcagag gccctttcat catcaggcag
360
ctgtgcctcc tgctgaatgc ggagaacatc ttccactcaa tggcagacat cctgctgcgg
420
gaggaggacc tcaagttcgc ctcgaccatg gtccacgccc tcaacaccat cctgctgacc
480
tccacagagc tcttccagct aaggaaccag ctgaaggacc tgaagaccct ggagagccag
540
aacctgttct gctgcctgta ccgctcctgg tgccacaacc cagtcaccac ggtgtccctc
600
tgcttctca cccagaacta ccggcacgccc tatgacctca tccagaagtt tggggacctg
660
gaggtcaccg tggacttctc cgcagaggtg gacaagctgg tgcagctgat tgagtgcctc
720
atcttcacat atctgcgcct gcagctgctg gacgtgaaga acaacccta cctgatcaag
780
gccctctacg gcctgctcat gctcctgccg cagagcagcg ccttccagct gctctgcac
840
cggtccagc gcgtgcccga cctgagctg ctgcagaccg aagacagtct aaaggcagcc
900
cccaagtcac agaaagctga ctcccctagc atcgactacg cagagctgct gcagcacttt
960
gagaaggtcc agaacaagca cctggaagtg cggcaccagc ggagcgggag tggggaccac
1020
ctggaccgga gggttgtcct ctgacaggcc tggcacggag gagggccccc cgagtggctc
1080
catgaaacac taagggtcgt cagccctccc cgaggagctc aaggacctgc ctgtcaggac
1140
cagggtggg cctgccaacc cagggcagtg ttggggccgg aggtgctgt gtctgcccac
1200

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gctcctctca gagtccagtc cccaggcctc cagcgctgtc agctgcaccc tggcattctc
 1260
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 1320
 atcaacctct ttctaatacc ctcttgga aaagagcttg ccctcctcca gcacactaga
 1380
 gctctggcct tgtgtgtata tgtatacata cgtgaacaca tgcctgtgtg tgtgtgtgtg
 1440
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 1550

<210> 4664

<211> 347

<212> PRT

<213> Homo sapiens

<400> 4664

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Arg | His | Thr | Asp | Ser | Leu | Phe | Pro | Ile | Leu | Leu | Gln | Thr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Asp | Glu | Ser | Asp | Glu | Val | Ile | Leu | Lys | Asp | Leu | Glu | Val | Leu | Ala |
| | | 20 | | | | | 25 | | | | | 30 | | | |
| Glu | Ile | Ala | Ser | Ser | Pro | Ala | Gly | Gln | Thr | Asp | Asp | Pro | Gly | Pro | Leu |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Asp | Gly | Pro | Asp | Leu | Gln | Ala | Ser | His | Ser | Glu | Leu | Gln | Val | Pro | Thr |
| | 50 | | | | 55 | | | | | | 60 | | | | |
| Pro | Gly | Arg | Ala | Gly | Leu | Leu | Asn | Thr | Ser | Gly | Thr | Lys | Gly | Leu | Glu |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Cys | Ser | Pro | Ser | Thr | Pro | Thr | Met | Asn | Ser | Tyr | Phe | Tyr | Lys | Phe | Met |
| | | | 85 | | | | | 90 | | | | | | 95 | |
| Ile | Asn | Leu | Leu | Lys | Arg | Phe | Ser | Ser | Glu | Arg | Lys | Leu | Leu | Glu | Val |
| | | 100 | | | | | 105 | | | | | | 110 | | |
| Arg | Gly | Pro | Phe | Ile | Ile | Arg | Gln | Leu | Cys | Leu | Leu | Leu | Asn | Ala | Glu |
| | | 115 | | | | | 120 | | | | | | 125 | | |
| Asn | Ile | Phe | His | Ser | Met | Ala | Asp | Ile | Leu | Leu | Arg | Glu | Glu | Asp | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Lys | Phe | Ala | Ser | Thr | Met | Val | His | Ala | Leu | Asn | Thr | Ile | Leu | Leu | Thr |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Ser | Thr | Glu | Leu | Phe | Gln | Leu | Arg | Asn | Gln | Leu | Lys | Asp | Leu | Lys | Thr |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Leu | Glu | Ser | Gln | Asn | Leu | Phe | Cys | Cys | Leu | Tyr | Arg | Ser | Trp | Cys | His |
| | | 180 | | | | | 185 | | | | | | 190 | | |
| Asn | Pro | Val | Thr | Thr | Val | Ser | Leu | Cys | Phe | Leu | Thr | Gln | Asn | Tyr | Arg |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| His | Ala | Tyr | Asp | Leu | Ile | Gln | Lys | Phe | Gly | Asp | Leu | Glu | Val | Thr | Val |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Asp | Phe | Leu | Ala | Glu | Val | Asp | Lys | Leu | Val | Gln | Leu | Ile | Glu | Cys | Pro |
| 225 | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Phe | Thr | Tyr | Leu | Arg | Leu | Gln | Leu | Leu | Asp | Val | Lys | Asn | Asn | Pro |
| | | | 245 | | | | | 250 | | | | | | 255 | |
| Tyr | Leu | Ile | Lys | Ala | Leu | Tyr | Gly | Leu | Leu | Met | Leu | Leu | Pro | Gln | Ser |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| Ser | Ala | Phe | Gln | Leu | Leu | Ser | His | Arg | Leu | Gln | Cys | Val | Pro | Asn | Pro |

<210> 4666

<211> 167
 <212> PRT
 <213> Homo sapiens

<400> 4666

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Gly Ile Thr Arg Arg Val Phe Met Trp Thr Val Ser Gly Thr Pro Cys
      20           25           30
Arg Glu Phe Trp Ser Arg Phe Arg Lys Glu Lys Glu Pro Val Val Val
      35           40           45
Glu Thr Val Glu Glu Lys Lys Glu Pro Ile Leu Val Cys Pro Pro Leu
      50           55           60
Arg Ser Arg Ala Tyr Thr Pro Pro Glu Asp Leu Gln Ser Arg Leu Glu
65           70           75           80
Ser Tyr Val Lys Glu Val Phe Gly Ser Ser Leu Pro Ser Asn Trp Gln
      85           90           95
Asp Ile Ser Leu Glu Asp Ser Arg Leu Lys Phe Asn Leu Leu Ala His
      100          105          110
Leu Ala Asp Asp Leu Gly His Val Val Pro Asn Ser Arg Leu His Gln
      115          120          125
Met Cys Arg Val Arg Asp Val Leu Asp Phe Tyr Asn Val Pro Ile Gln
      130          135          140
Asp Arg Ser Lys Phe Asp Glu Leu Ser Ala Ser Asn Leu Pro Pro Asn
145          150          155          160
Leu Lys Ile Thr Trp Ser Tyr
      165

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<210> 4667
 <211> 1031
 <212> DNA
 <213> Homo sapiens

<400> 4667

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120
cctctgctgg aggggaaagc ccgctcctgt tttgctatga ccgagcccca ggttgccctt
180
tcagatgcca ccaacattga ggcttccatc agagaggagg acagcttcta tgtcataaac
240
ggtcacaaat ggtggatcac aggcacctcg gatcctcggt gccaaactctg tgtgtttatg
300
ggaaaaacag acccatatgc accaagacac cggcagcagt ctgtgctctt ggttcccatg
360
gataccccag ggataaaaaat catccggcct ctgacgggtgt atggactgga agatgcacca
420
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480
ggccctggcc gaggttttga gatcgcccag ggcagactgg gccccggcag gatccatcac
540
tgcatgaggc tgatcgggtt ctgagagagg gccctggcac tcatgaaggc ccgcgtgagt
600

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gctttccccc gcaccagca ctgactcaga accaccacct tctgctttgc tgcggactt
 660
 caattcctac ctgttttctg agtgcagtcc tagcaggtga agcaaggtga tgccttgcc
 720
 aagaagtgc attcctgtct gctttgcac tgctactttg ctgcagtttg gattcagagc
 780
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 840
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 900
 gtgcaatggc tcacagctat aatcccagta ctttgggagg tctaggtagg aggggtgctt
 960
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 1020
 aaaaaaaaaa a
 1031

<210> 4668
 <211> 207
 <212> PRT
 <213> Homo sapiens

<400> 4668
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 20 25 30
 Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu Glu Gly Lys Ala Arg
 35 40 45
 Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala Ser Ser Asp Ala Thr
 50 55 60
 Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser Phe Tyr Val Ile Asn
 65 70 75 80
 Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp Pro Arg Cys Gln Leu
 85 90 95
 Cys Val Phe Met Gly Lys Thr Asp Pro His Ala Pro Arg His Arg Gln
 100 105 110
 Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro Gly Ile Lys Ile Ile
 115 120 125
 Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala Pro Gly Gly His Gly
 130 135 140
 Glu Val Arg Phe Glu His Val Arg Val Pro Lys Glu Asn Met Val Leu
 145 150 155 160
 Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly Pro Gly
 165 170 175
 Arg Ile His His Cys Met Arg Leu Ile Gly Phe Ser Glu Arg Ala Leu
 180 185 190
 Ala Leu Met Lys Ala Arg Val Ser Ala Phe Pro Arg Thr Gln His
 195 200 205

<210> 4669
 <211> 683
 <212> DNA
 <213> Homo sapiens

<400> 4669

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 120
 gacatgaaca taaaaaaaca gattcaggaa cagcaccagg ctgccattat tattcagaag
 180
 cattgtaaag cctttaaaat aaggaagcat tatctccaca ttagagcaac agtagtttct
 240
 attcaaagaa gatacagaaa actaactgca gtgcgtaccc aagcagttat ttgtatacag
 300
 tcttattaca gaggctttta agtacgaaag gatattcaaa atatgcaccg ggctgccaca
 360
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 420
 gcaattgtgg ttatacagaa ttattatagg ttgtatgta gagtaaaaac agaaagaaaa
 480
 aacttttttag cagttcagaa atctgtccga actattcagg ctgcttttag aggcattgaaa
 540
 gttagacaaa aattgaaaaa atgtatcaga ggaaaagatg gcagccattg ttaaccaatc
 600
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 683

<210> 4670

<211> 135

<212> PRT

<213> Homo sapiens

<400> 4670

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Phe | Ser | Gly | Leu | Arg | Gly | Ile | Ile | Gln | Glu | Lys | Tyr | Arg | Ala |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Asn | Lys | Lys | Lys | Gln | Lys | Val | Phe | Gln | His | Asn | Glu | Leu | Lys | Lys | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Thr | Cys | Val | Gln | Ala | Gly | Phe | Gln | Asp | Met | Asn | Ile | Lys | Lys | Gln | Ile |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Gln | Glu | Gln | His | Gln | Ala | Ala | Ile | Ile | Ile | Gln | Lys | His | Cys | Lys | Ala |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Phe | Lys | Ile | Arg | Lys | His | Tyr | Leu | His | Ile | Arg | Ala | Thr | Val | Val | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Ile | Gln | Arg | Arg | Tyr | Arg | Lys | Leu | Thr | Ala | Val | Arg | Thr | Gln | Ala | Val |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Ile | Cys | Ile | Gln | Ser | Tyr | Tyr | Arg | Gly | Phe | Lys | Val | Arg | Lys | Asp | Ile |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Gln | Asn | Met | His | Arg | Ala | Ala | Thr | Leu | Ile | Gln | Ser | Phe | Tyr | Arg | Met |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| His | Arg | Ala | Lys | Val | Asp | Tyr | | | | | | | | | |
| | | 130 | | | | 135 | | | | | | | | | |

<210> 4671

<211> 657

<212> DNA

<213> Homo sapiens

<400> 4671

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 120
 ggggctcggc aggggctacc cggtccgct. tccgccagc aatggagact gcagccacgt
 180
 taggccaggc tgctgcagtg gtttcagcat ctatccgcag ggatccacgg ggaagctggt
 240
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 480
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 540
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 657

<210> 4672

<211> 152

<212> PRT

<213> Homo sapiens

<400> 4672

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 20 25 30
 Lys Leu Met Leu Asp His Met Thr Asn Thr Thr Asn Ala Ser His Val
 35 40 45
 Pro Val Gln Pro Gly Ser Ser Val Val Met Met Val Asn Asn Leu Gly
 50 55 60
 Gly Leu Ser Phe Leu Glu Leu Gly Ile Ile Ala Asp Ala Thr Val Arg
 65 70 75 80
 Ser Leu Glu Gly Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr
 85 90 95
 Phe Met Ser Ala Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Leu
 100 105 110
 Val Asp Glu Pro Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala
 115 120 125
 Ala Trp Pro Arg Ser Gly Trp Arg Trp Cys Trp Asn Gly Cys Ala Ala
 130 135 140
 Leu Ser Trp Ala Trp Arg Asn Thr
 145 150

<210> 4673
<211> 1335
<212> DNA
<213> Homo sapiens

<400> 4673
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120
aatctaagga tgaatgttca ccgtggcagt gacagtgaca ggttattgcg gcaggaggcc
180
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240
tcattctggtc ctcataatct tacttatcct ctaggtccca ggaatgaaga cctctcactt
300
gactatgcct ctcagccagc aaatcttcag ttccctcaca taatgcccct tgctgaagac
360
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420
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480
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540
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600
cccaatgaga agggagagta tgagattgct gaaggcatca gtgcaactgt atttcgcaca
660
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780
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900
tgccacattg ttgtgctgac ggatgaggat tctgtggact gggatgaaga ccaccctcca
960
ccaatggggg aggaatattc ccaaattctt tatagctcca agctctacag attcttcaaa
1020
tatattgaga atagggatgt tgcaaaaaca gtgttaaagg aacggggcct aaaaaacatt
1080
cgcattggaa ttgaagggtta ccctacctgt aaagaaaaaa ttaagagaag gcctggcggc
1140
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caagtggatg aactt
1335

<210> 4674

<211> 402

<212> PRT

<213> Homo sapiens

<400> 4674

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Met Asn Val His Arg Gly Ser Asp Ser Asp Arg Leu Leu Arg Gln Glu
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Ala Ser Cys Leu Val Asp Asp Thr Leu Ala Val Ala Gln Glu Lys Glu
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Asn Leu Gln Phe Pro His Ile Met Pro Leu Ala Glu Asp Ile Lys Gly
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Ser Cys Phe Gln Ser Gly Asn Lys Arg Asn His Glu Pro Phe Ile Ala
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Pro Glu Arg Phe Gly Asn Ser Ser Val Gly Phe Gly Ser Asn Ser His
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Ser Gln Ala Pro Glu Lys Val Thr Leu Leu Val Asp Gly Thr Arg Phe
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Val Val Asn Pro Gln Ile Phe Thr Ala His Pro Asp Thr Met Leu Gly
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Arg Met Phe Gly Pro Gly Arg Glu Tyr Asn Phe Thr Arg Pro Asn Glu
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Lys Gly Glu Tyr Glu Ile Ala Glu Gly Ile Ser Ala Thr Val Phe Arg
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Thr Val Leu Asp Tyr Tyr Lys Thr Gly Ile Ile Asn Cys Pro Asp Gly
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Ile Ser Ile Pro Asp Leu Arg Asp Thr Cys Asp Tyr Leu Cys Ile Asn
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Phe Asp Phe Asn Thr Ile Arg Cys Gln Asp Leu Ser Ala Leu Leu His
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Glu Leu Ser Asn Asp Gly Ala His Lys Gln Phe Asp His Tyr Leu Glu
225          230          235          240
Glu Leu Ile Leu Pro Ile Met Val Gly Cys Ala Lys Lys Gly Glu Arg
245          250          255
Glu Cys His Ile Val Val Leu Thr Asp Glu Asp Ser Val Asp Trp Asp
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Glu Asp His Pro Pro Pro Met Gly Glu Glu Tyr Ser Gln Ile Leu Tyr
275          280          285
Ser Ser Lys Leu Tyr Arg Phe Phe Lys Tyr Ile Glu Asn Arg Asp Val
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Ile Glu Gly Tyr Pro Thr Cys Lys Glu Lys Ile Lys Arg Arg Pro Gly
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Gly Arg Ser Glu Val Ile Tyr Asn Tyr Val Gln Arg Pro Phe Ile Gln
340          345          350
Met Ser Trp Glu Lys Glu Glu Gly Lys Ser Arg His Val Asp Phe Gln
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Cys Val Arg Ser Lys Ser Leu Thr Asn Leu Val Ala Ala Gly Asp Asp
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<211> 2868
<212> DNA
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<211> 641

<212> PRT

<213> Homo sapiens

<400> 4676

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 Asn Ser Phe Cys Ser Asp Asp Thr Gly Cys Pro Ser Ser Gln Ser Val
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 Ser Pro Val Lys Thr Pro Ser Asp Ala Gly Asn Ser Pro Ile Gly Phe
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 Cys Pro Gly Ser Asp Glu Gly Phe Thr Arg Lys Lys Cys Thr Ile Gly
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 Met Val Gly Glu Gly Ser Ile Gln Ser Ser Arg Tyr Lys Lys Glu Ser
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 Gly Ser Lys Arg Ser Ser Ser Ser Arg Asn Arg Gly Pro His Gly Arg
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<211> 940

<212> DNA

<213> Homo sapiens

<400> 4677

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<211> 133

<212> PRT

<213> Homo sapiens

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Phe | Phe | Ser | His | Ser | Val | Arg | Cys | Ala | Arg | Lys | Gln | Leu | Leu | Gly |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Thr | Val | Phe | Ile | Trp | Phe | Val | Gly | Gln | Leu | Leu | Gly | Gly | Glu | Leu |
| | | 35 | | | | 40 | | | | | | 45 | | | |
| Lys | Gly | Tyr | Ser | Lys | Thr | Asn | Thr | Thr | Ser | Ser | Arg | Pro | Ala | Ser | Ser |
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| Arg | Gly | Ser | Leu | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Ser | Leu | Thr | Lys |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Asp | Ala | Leu | Pro | Ser | Ser | Leu | Lys | Ser | Asp | Ser | Thr | Thr | Ile | Thr | Ser |
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| Gly | Leu | Val | Phe | Pro | Phe | Arg | Ser | Leu | Cys | Val | Asn | Pro | Ala | Lys | Ser |
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| Ser | Val | Ser | Glu | Ser | Val | Ser | Ser | Ile | Lys | Ile | Leu | Leu | Ser | Ser | Ser |
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<211> 2284

<212> DNA

<213> Homo sapiens

<400> 4679

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<211> 112

<212> PRT

<213> Homo sapiens

<400> 4680

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| Thr | Ser | Phe | His | Arg | Gly | Thr | Cys | Leu | Glu | Phe | Trp | His | Arg | Gly | Leu |
| | | | 20 | | | | 25 | | | | | | 30 | | |
| Thr | Glu | His | Ser | Ser | Asp | Ile | Phe | Leu | Gln | Leu | Glu | Met | Leu | Cys | Trp |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Ser | Pro | Cys | Ser | Leu | Thr | Phe | Ser | Arg | Ala | Ile | Lys | Ala | Thr | Ser | Ser |
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| Ile | Ala | Gly | Pro | Gln | Thr | Phe | Gln | Gly | Lys | His | Cys | Phe | Thr | Ser | Cys |
| 65 | | | | 70 | | | | 75 | | | | | | 80 | |
| Arg | Gln | Leu | Ile | Ser | Gln | Lys | Pro | Leu | Gln | Lys | Pro | Val | Leu | Pro | Gly |
| | | | 85 | | | | 90 | | | | | | 95 | | |
| Thr | Ala | Gly | Ala | Gly | Val | Cys | Lys | Ile | Lys | Glu | Gly | Gln | Leu | Arg | Thr |
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<211> 906

<212> DNA

<213> Homo sapiens

<400> 4681

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<210> 4682

<211> 153

<212> PRT

<213> Homo sapiens

<400> 4682

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| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Lys | Glu | Met | Leu | Gln | Lys | Phe | Lys | Phe | Ser | His | Val | Tyr | Phe | Lys | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Leu | Phe | His | Gln | Thr | Thr | Arg | Gln | Lys | Asn | Leu | Ser | Phe | Leu | Pro |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Pro | Phe | Ser | Phe | Phe | Pro | Ser | Cys | Thr | His | Leu | Glu | Asn | Phe | Thr | Phe |
| | | | 50 | | | | 55 | | | | 60 | | | | |
| Leu | Glu | Ser | Pro | Gln | Asn | Asn | Thr | Lys | Val | Ile | Val | Gly | Ala | Thr | Gly |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Phe | Met | Leu | Tyr | Cys | Gly | Ala | Arg | Gly | Lys | Thr | Cys | Leu | Tyr | Ala | Gly |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Asn | Thr | His | Asn | His | Ser | Phe | Arg | Phe | Val | Cys | Leu | Met | Val | Ile | Cys |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| His | Lys | Arg | Asp | Leu | Gln | Lys | Gln | Gly | Ala | Leu | Val | Asn | Val | Gln | Tyr |
| | | | 115 | | | | 120 | | | | | 125 | | | |
| Leu | Asp | Phe | Cys | Val | Leu | Arg | Thr | Gln | Lys | Gly | Ala | Thr | Leu | Leu | Phe |
| | | | 130 | | | | 135 | | | | | 140 | | | |
| Gly | Pro | Val | Ser | Gly | His | Leu | Val | Ile | | | | | | | |
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<210> 4683

<211> 3246

<212> DNA

<213> Homo sapiens

<400> 4683

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<210> 4684
 <211> 385
 <212> PRT
 <213> Homo sapiens

<400> 4684
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 Pro His Ala Arg Ser Arg Val Arg Pro Ala Pro Lys Thr Ile Pro Gln
 35 40 45
 Gln Thr His Gly Thr Ala Arg Ile Gly Thr His Asn Gly Thr Phe His
 50 55 60
 Cys Asp Glu Ala Leu Ala Cys Ala Leu Leu Arg Leu Leu Pro Glu Tyr
 65 70 75 80
 Arg Asp Ala Glu Ile Val Arg Thr Arg Asp Pro Glu Lys Leu Ala Ser
 85 90 95
 Cys Asp Ile Val Val Asp Val Gly Gly Glu Tyr Asp Pro Arg Arg His
 100 105 110
 Arg Tyr Asp His His Gln Arg Ser Phe Thr Glu Thr Met Ser Ser Leu
 115 120 125
 Ser Pro Gly Lys Pro Trp Gln Thr Lys Leu Ser Ser Ala Gly Leu Ile
 130 135 140
 Tyr Leu His Phe Gly His Lys Leu Leu Ala Gln Leu Leu Gly Thr Ser
 145 150 155 160
 Glu Glu Asp Ser Met Val Gly Thr Leu Tyr Asp Lys Met Tyr Glu Asn
 165 170 175
 Phe Val Glu Glu Val Asp Ala Val Asp Asn Gly Ile Ser Gln Trp Ala
 180 185 190
 Glu Gly Glu Pro Arg Tyr Ala Leu Thr Thr Thr Leu Ser Ala Arg Val
 195 200 205
 Ala Arg Leu Asn Pro Thr Trp Asn His Pro Asp Gln Asp Thr Glu Ala
 210 215 220
 Gly Phe Lys Arg Ala Met Asp Leu Val Gln Glu Glu Phe Leu Gln Arg
 225 230 235 240
 Leu Asp Phe Tyr Gln His Ser Trp Leu Pro Ala Arg Ala Leu Val Glu
 245 250 255
 Glu Ala Leu Ala Gln Arg Phe Gln Val Asp Pro Ser Gly Glu Ile Val
 260 265 270
 Glu Leu Ala Lys Gly Ala Cys Pro Trp Lys Glu His Leu Tyr His Leu
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<400> 4686

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| Gly | Leu | Ser | Asp | His | Pro | His | Val | His | Thr | Ala | Ser | Arg | Ala | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Asp | Ala | Arg | Gly | Arg | Ala | Gly | His | Arg | Ser | Ala | Ala | Ala | Ser | Asn | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Gly | Leu | Ser | Leu | Gln | Glu | Ala | Gln | Gln | Ile | Leu | Asn | Val | Ser | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Ser | Pro | Glu | Glu | Val | Gln | Lys | Asn | Tyr | Glu | His | Leu | Phe | Lys | Val |

| | | |
|---|-----|-----|
| 50 | 55 | 60 |
| Asn Asp Lys Ser Val Gly Gly Ser Phe Tyr Leu Gln Ser Lys Val Val | | |
| 65 | 70 | 75 |
| Arg Ala Lys Glu Arg Leu Asp Glu Glu Leu Lys Ile Gln Ala Gln Glu | | 80 |
| | 85 | 90 |
| Asp Arg Glu Lys Gly Gln Met Pro His Thr | | 95 |
| | 100 | 105 |

<210> 4687

<211> 309

<212> DNA

<213> Homo sapiens

<400> 4687

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309

<210> 4688

<211> 90

<212> PRT

<213> Homo sapiens

<400> 4688

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| Met Asp Ile Pro Pro Leu Ala Gly Lys Ile Ala Ala Leu Ser Leu Ser | | |
| 1 | 5 | 10 |
| Ala Leu Pro Val Ser Tyr Ala Leu Asn His Val Ser Ala Leu Ser His | | 15 |
| | 20 | 25 |
| Pro Leu Trp Val Ala Leu Met Ser Ala Leu Ile Leu Gly Leu Leu Phe | | 30 |
| | 35 | 40 |
| Val Ala Val Tyr Ser Leu Ser His Gly Glu Val Ser Tyr Asp Pro Leu | | 45 |
| | 50 | 55 |
| Tyr Ala Gly Phe Ala Val Phe Ala Phe Thr Ser Gly Gly Asp Leu Ile | | 60 |
| | 65 | 70 |
| Ile Ala Leu Gln Glu Asp Ser Tyr Gly Gly | | 75 |
| | 85 | 90 |

<210> 4689

<211> 898

<212> DNA

<213> Homo sapiens

<400> 4689

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 240
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 300
 caggatgcgg tgctgtcttc tgcccagcgc atgggtgaca cccacactgg cctggcgctg
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 780
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<210> 4690

<211> 299

<212> PRT

<213> Homo sapiens

<400> 4690

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 35 40 45
 Ser His Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val
 50 55 60
 Ala Pro Leu Pro Leu Ala Pro Xaa Ala Leu Arg Ala Ser Leu Val His
 65 70 75 80
 Val Gly Ser Arg Pro Tyr Thr Glu Phe Pro Phe Gly Gln His Ser Ser
 85 90 95
 Gly Glu Ala Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly
 100 105 110
 Asp Thr His Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe
 115 120 125
 Ala Glu Ala Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp
 130 135 140
 Val Thr Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu

145 150 155 160
 Leu Lys Asp Leu Gly Val Thr Val Phe Ile Val Ser Thr Gly Arg Gly
 165 170 175
 Asn Phe Leu Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His
 180 185 190
 Leu His Phe Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu
 195 200 205
 Arg Gly Ser Ile Leu Asp Ala Met Arg Pro Gln Gln Leu His Ala Thr
 210 215 220
 Glu Ile Thr Ser Ser Gly Phe Arg Leu Ala Trp Pro Pro Leu Leu Thr
 225 230 235 240
 Ala Asp Ser Gly Tyr Tyr Val Leu Glu Leu Val Pro Ser Ala Gln Pro
 245 250 255
 Gly Ala Ala Arg Arg Gln Gln Leu Pro Gly Asn Ala Thr Asp Trp Ile
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 Trp Ala Gly Leu Asp Pro Asp Thr Asp Tyr Asp Val Ala Leu Val Pro
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<210> 4691
 <211> 2375
 <212> DNA
 <213> Homo sapiens

<400> 4691
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2375

<210> 4692

<211> 383
 <212> PRT
 <213> Homo sapiens

<400> 4692

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Ser | Arg | Ile | Asn | Asn | Tyr | Thr | Ile | Pro | Glu | Glu | Glu | Ile | Gly | Ser |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Phe | Leu | Phe | His | Ala | Ile | Asn | Lys | Pro | Asn | Ala | Pro | Ile | Trp | Leu | Ile |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Leu | Asn | Glu | Ala | Gly | Leu | Tyr | Trp | Arg | Ala | Val | Gly | Asn | Ser | Thr | Phe |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Ile | Ala | Cys | Leu | Gln | Arg | Ala | Leu | Asn | Leu | Ala | Pro | Leu | Gln | Tyr |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Gln | Asp | Val | Pro | Leu | Val | Asn | Leu | Ala | Asn | Leu | Leu | Ile | His | Tyr | Gly |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Leu | His | Leu | Asp | Ala | Thr | Lys | Leu | Leu | Gln | Ala | Leu | Ala | Ile | Asn | |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Ser | Ser | Glu | Pro | Leu | Thr | Phe | Leu | Ser | Leu | Gly | Asn | Ala | Tyr | Leu | Ala |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Lys | Asn | Ile | Ser | Gly | Ala | Leu | Glu | Ala | Phe | Arg | Gln | Ala | Leu | Lys |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Leu | Thr | Thr | Lys | Cys | Pro | Glu | Cys | Glu | Asn | Ser | Leu | Lys | Leu | Ile | Arg |
| 145 | | | | 150 | | | | | | 155 | | | | 160 | |
| Cys | Met | Gln | Phe | Tyr | Pro | Phe | Leu | Tyr | Asn | Ile | Thr | Ser | Ser | Val | Cys |
| | | | 165 | | | | | | 170 | | | | | 175 | |
| Ser | Gly | Asn | Cys | His | Glu | Lys | Thr | Leu | Asp | Asn | Ser | His | Asp | Lys | Gln |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Lys | Tyr | Phe | Asp | Asn | Ser | Gln | Ser | Leu | Asp | Ala | Ala | Glu | Glu | Glu | Pro |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Ser | Glu | Arg | Gly | Thr | Glu | Glu | Asp | Pro | Val | Phe | Ser | Val | Glu | Asn | Ser |
| | 210 | | | | 215 | | | | | | 220 | | | | |
| Gly | Arg | Asp | Ser | Asp | Ala | Leu | Arg | Leu | Glu | Ser | Thr | Val | Val | Glu | Glu |
| 225 | | | | 230 | | | | | | 235 | | | | 240 | |
| Ser | Asn | Gly | Ser | Asp | Glu | Met | Glu | Asn | Ser | Asp | Glu | Thr | Lys | Met | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Glu | Glu | Ile | Leu | Ala | Leu | Val | Asp | Glu | Phe | Gln | Gln | Ala | Trp | Pro | Leu |
| | | 260 | | | | | 265 | | | | | | 270 | | |
| Glu | Gly | Phe | Gly | Gly | Ala | Leu | Glu | Met | Lys | Gly | Arg | Arg | Leu | Asp | Leu |
| | 275 | | | | | | 280 | | | | | 285 | | | |
| Gln | Gly | Ile | Arg | Val | Leu | Lys | Lys | Gly | Pro | Gln | Asp | Gly | Val | Ala | Arg |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Ser | Ser | Cys | Tyr | Gly | Asp | Cys | Arg | Ser | Glu | Asp | Asp | Glu | Ala | Thr | Glu |
| 305 | | | | 310 | | | | | | 315 | | | | 320 | |
| Trp | Ile | Thr | Phe | Gln | Val | Lys | Arg | Val | Lys | Lys | Pro | Lys | Gly | Asp | His |
| | | | 325 | | | | | | 330 | | | | | 335 | |
| Lys | Lys | Thr | Pro | Gly | Lys | Lys | Val | Glu | Thr | Gly | Gln | Ile | Glu | Asn | Gly |
| | | 340 | | | | | | 345 | | | | | 350 | | |
| His | Arg | Tyr | Gln | Ala | Asn | Leu | Glu | Ile | Thr | Gly | Pro | Lys | Val | Ala | Ser |
| | 355 | | | | | | 360 | | | | | 365 | | | |
| Pro | Gly | Pro | Gln | Gly | Leu | Leu | Asp | Trp | Lys | Thr | Arg | Lys | Val | Pro | |
| | 370 | | | | | 375 | | | | | 380 | | | | |

<210> 4693
 <211> 794
 <212> DNA
 <213> Homo sapiens

<400> 4693
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 180
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 240
 gattcctggc tggctatgtg gtggccaaac tgagggcatc agcagtattg ggctttgctg
 300
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<210> 4694
 <211> 103
 <212> PRT
 <213> Homo sapiens

<400> 4694
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 20 25 30
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 35 40 45
 Lys Gly Phe Leu Ala Gly Tyr Val Val Ala Lys Leu Arg Ala Ser Ala
 50 55 60
 Val Leu Gly Phe Ala Val Gly Thr Cys Thr Gly Ile Tyr Ala Ala Gln
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<210> 4695

<211> 2209

<212> DNA

<213> Homo sapiens

<400> 4695

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<210> 4696

<211> 302

<212> PRT

<213> Homo sapiens

<400> 4696

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 35 40 45
 Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala Ala Trp Pro Asn
 50 55 60
 Val Ala Ala Val Ser Ile Thr Gly Arg Lys Arg Ser Arg Val Ala Pro
 65 70 75 80
 Ala Glu Pro Gln Glu Ala Pro Asp Ser Thr Ala Ala Xaa Glu Ala Gln
 85 90 95
 Pro Arg Ser Xaa Met Ala Leu Val Leu Glu Arg Val Cys Ser Thr Leu
 100 105 110
 Leu Gly Leu Glu Glu His Leu Asn Ala Leu Asp Arg Ala Ala Gly Asp
 115 120 125
 Gly Asp Cys Gly Thr Thr His Ser Arg Ala Ala Arg Ala Ile Gln Glu
 130 135 140
 Trp Leu Lys Glu Gly Pro Pro Pro Ala Ser Pro Ala Gln Leu Leu Ser

145 150 155 160
 Lys Leu Ser Val Leu Leu Leu Glu Lys Met Gly Gly Ser Ser Gly Ala
 165 170 175
 Leu Tyr Gly Leu Phe Leu Thr Ala Ala Gln Pro Leu Lys Ala Lys
 180 185 190
 Thr Ser Leu Pro Ala Trp Ser Ala Ala Met Asp Ala Gly Leu Glu Ala
 195 200 205
 Met Gln Lys Tyr Gly Lys Ala Ala Pro Gly Asp Arg Thr Met Leu Asp
 210 215 220
 Ser Leu Trp Ala Ala Glu Gln Glu Leu Gln Ala Trp Lys Ser Pro Gly
 225 230 235 240
 Ala Asp Leu Leu Gln Val Leu Thr Lys Ala Val Lys Ser Ala Glu Ala
 245 250 255
 Ala Ala Glu Ala Thr Lys Asn Met Glu Ala Gly Ala Gly Arg Ala Ser
 260 265 270
 Tyr Ile Ser Ser Ala Arg Leu Glu Gln Pro Asp Pro Gly Ala Val Ala
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<210> 4697

<211> 1047

<212> DNA

<213> Homo sapiens

<400> 4697

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 420
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 840

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<210> 4698
 <211> 182
 <212> PRT
 <213> Homo sapiens

<400> 4698
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 Asp Ala Asp Ile Pro Leu Glu Leu Val Phe His Leu Pro Val Asn Tyr
 35 40 45
 Pro Ser Cys Leu Pro Gly Ile Ser Ile Asn Ser Glu Gln Leu Thr Arg
 50 55 60
 Ala Gln Cys Val Thr Val Lys Glu Lys Leu Leu Glu Gln Ala Glu Ser
 65 70 75 80
 Leu Leu Ser Glu Pro Met Val His Glu Leu Val Leu Trp Ile Gln Gln
 85 90 95
 Asn Leu Arg His Ile Leu Ser Gln Pro Glu Thr Gly Ser Gly Ser Glu
 100 105 110
 Lys Cys Thr Phe Ser Thr Ser Thr Thr Met Asp Asp Gly Leu Trp Ile
 115 120 125
 Thr Leu Leu His Leu Asp His Met Arg Ala Lys Thr Lys Tyr Val Lys
 130 135 140
 Ile Val Glu Lys Trp Ala Ser Asp Leu Arg Leu Thr Gly Arg Leu Met
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<210> 4699
 <211> 1441
 <212> DNA
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 240

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<210> 4700

<211> 116

<212> PRT

<213> Homo sapiens

<400> 4700

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| Met | Asp | Thr | Ile | Phe | Gly | Asn | Val | Thr | Glu | Tyr | Gln | Arg | Leu | Gln | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Thr | Arg | Gly | Gln | Ser | Lys | Thr | Gly | Trp | Lys | Leu | Pro | Val | Thr | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ile | Cys | Cys | Pro | Arg | His | Pro | Leu | Met | Arg | Leu | Lys | Leu | Gly | Pro | Ser |

<400> 4702
Arg Gln Gly Phe Thr Leu Thr Arg Met Ile Ser Ile Ser Gly Pro Arg

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His Xaa Pro Pro Gly His Phe Phe Leu Glu Thr Arg Ser Tyr Ser Leu
      35           40           45
Ala Lys Asn Gly Val Gln Trp Cys Asn Val Gly Ser Leu Gln Pro Lys
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Pro Pro Gly Leu Lys
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<210> 4703

<211> 513

<212> DNA

<213> Homo sapiens

<400> 4703

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<210> 4704

<211> 112

<212> PRT

<213> Homo sapiens

<400> 4704

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      20           25           30
His Leu Pro Ala Glu Leu Thr Ala Glu Glu Lys Glu Asp Leu Leu Lys
      35           40           45
Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
      50           55           60
Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
65           70           75           80
Ala Leu Thr Arg Leu His Gln Leu Lys Leu Gly His Thr Leu Val
      85           90           95
Val Glu Phe Ala Lys Glu Gln Asp Arg Val His Ser Pro Cys Pro Thr

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100

105

110

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 <212> DNA
 <213> Homo sapiens

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<210> 4706
 <211> 154
 <212> PRT
 <213> Homo sapiens

<400> 4706
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 35 40 45
 Val Met Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Lys Gly Arg
 50 55 60
 Ser Ser Leu Thr Ser Ala Phe Ser Leu Leu Leu Pro Gln Met Ala Asn
 65 70 75 80
 Tyr Leu Thr Arg Gln Ala His Thr Gly Gly Gly Cys Ser Lys Gln Pro
 85 90 95
 Gln Glu Gly Thr Ile Trp Arg Gln Met Thr Lys Thr Trp Ala Pro His
 100 105 110
 Val His Pro Ile Gln Pro Val Cys Ala Ser Arg Gly Gln Thr Ser His
 115 120 125
 Ile Val Phe Trp Leu Val Leu Leu Lys Phe Leu Arg Leu Val Met Ser
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150

<210> 4707

<211> 748

<212> DNA

<213> Homo sapiens

<400> 4707

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 748

<210> 4708

<211> 128

<212> PRT

<213> Homo sapiens

<400> 4708

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| Met | Ala | Ala | Pro | Glu | Gln | Pro | Leu | Ala | Ile | Ser | Arg | Gly | Cys | Thr | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Ser | Ser | Leu | Ser | Pro | Pro | Arg | Gly | Asp | Arg | Thr | Leu | Leu | Val | Arg |
| | | | 20 | | | | | 25 | | | | 30 | | | |
| His | Leu | Pro | Ala | Glu | Leu | Thr | Ala | Glu | Glu | Lys | Glu | Asp | Leu | Leu | Lys |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Tyr | Phe | Gly | Ala | Gln | Ser | Val | Arg | Val | Leu | Ser | Asp | Lys | Gly | Arg | Leu |
| | | | 50 | | | 55 | | | | | 60 | | | | |
| Lys | His | Thr | Ala | Phe | Ala | Thr | Phe | Pro | Asn | Glu | Lys | Ala | Ala | Ile | Lys |
| | | | | | 70 | | | | 75 | | | | | 80 | |
| Ala | Leu | Thr | Arg | Leu | His | Gln | Leu | Lys | Leu | Gly | His | Thr | Leu | Val | |
| | | | | 85 | | | | 90 | | | | | 95 | | |
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3892

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<211> 304
<212> PRT
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35 40 45
Gln Ser Arg Gly Phe Gly Phe Val Lys Phe Lys Asp Pro Asn Cys Val
50 55 60
Gly Thr Val Leu Ala Ser Arg Pro His Thr Leu Asp Gly Arg Asn Ile
65 70 75 80
Asp Pro Lys Pro Cys Thr Pro Arg Gly Met Gln Pro Glu Arg Thr Arg
85 90 95
Pro Lys Glu Gly Trp Gln Lys Gly Pro Arg Ser Asp Asn Ser Lys Ser
100 105 110
Asn Lys Ile Phe Val Gly Gly Ile Pro His Asn Cys Gly Glu Thr Glu
115 120 125
Leu Arg Glu Tyr Phe Lys Lys Phe Gly Val Val Thr Glu Val Val Met
130 135 140
Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Phe Gly Phe Ile Thr
145 150 155 160
Phe Glu Asp Glu Gln Ser Val Asp Gln Ala Val Asn Met His Phe His
165 170 175
Asp Ile Met Gly Lys Lys Val Glu Val Lys Arg Ala Glu Pro Arg Asp
180 185 190
Ser Lys Ser Gln Ala Pro Gly Gln Pro Gly Ala Ser Gln Trp Gly Ser
195 200 205
Arg Val Val Pro Asn Ala Ala Asn Gly Trp Ala Gly Gln Pro Pro Pro
210 215 220
Thr Trp Gln Gln Gly Tyr Gly Pro Gln Gly Met Trp Val Pro Ala Gly
225 230 235 240
Gln Ala Ile Gly Gly Tyr Gly Pro Pro Pro Ala Gly Arg Gly Ala Pro
245 250 255
Pro Pro Pro Pro Phe Thr Ser Tyr Ile Val Ser Thr Pro Pro Gly
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Gly Phe Pro Pro Pro Gln Gly Phe Pro Gln Gly Tyr Gly Ala Pro Pro
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Gln Phe Ser Phe Gly Tyr Gly Pro Pro Pro Pro Pro Pro Gly Ser Arg
290 295 300

<210> 4711
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 4711

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<212> PRT

<213> Homo sapiens

<400> 4712

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| Val | Gly | Ser | Gly | Ser | Arg | Glu | Leu | Ser | Leu | Arg | Pro | Ser | Arg | Ser | Gly |
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| Glu | Glu | Glu | Gln | Leu | Ser | Gly | Ala | Gly | Tyr | Arg | Val | Ser | Ala | Ala | Leu |
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| Gly | Gly | Phe | Gln | Met | His | Tyr | Glu | Lys | Thr | Pro | Phe | Asp | Gln | Leu | Ala |
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| Phe | Ile | Glu | Glu | Leu | Phe | Ser | Leu | Met | Val | Val | Asn | Arg | Leu | Thr | Glu |
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<211> 1324

<212> DNA

<213> Homo sapiens

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<213> Homo sapiens

<400> 4714

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<211> 239

<212> PRT

<213> Homo sapiens

<400> 4716

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 85 90 95
 Glu Lys Pro Asn Lys Asp Leu Glu Ser Cys Ser Asp Asp Asp Asn Gln
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 Gly Ser Lys Ser Pro Lys Ile Leu Thr Asp Glu Met Leu Leu Gln Ala
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 Lys Pro Pro Lys Lys Lys Lys Lys Arg Arg Gln Lys Glu Glu Glu
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<211> 2753

<212> DNA

<213> Homo sapiens

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<210> 4718

<211> 259

<212> PRT

<213> Homo sapiens

<400> 4718

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| Gln | Gln | Lys | Arg | Gly | Arg | Arg | Glu | His | Lys | Ala | Leu | Ile | Lys | Gln | Asp |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Asn | Leu | Asp | Ala | Phe | Asn | Glu | Arg | Asp | Pro | Tyr | Lys | Ala | Asp | Asp | Ser |
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| Thr | Phe | Pro | Leu | Glu | Arg | Asp | Glu | Val | Met | Pro | Pro | Pro | Leu | Gln | His |
| | 65 | | | | 70 | | | | | 75 | | | | 80 | |
| Pro | Gln | Thr | Asp | Arg | Leu | Thr | Cys | Pro | Lys | Gly | Leu | Pro | Trp | Ala | Pro |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Lys | Val | Arg | Glu | Lys | Asp | Ile | Glu | Met | Phe | Leu | Glu | Ser | Ser | Arg | Ser |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Lys | Phe | Ile | Gly | Tyr | Thr | Leu | Gly | Ser | Asp | Thr | Asn | Thr | Val | Val | Gly |
| | 115 | | | | | 120 | | | | | 125 | | | | |
| Leu | Pro | Arg | Pro | Ile | His | Glu | Ser | Ile | Lys | Thr | Leu | Lys | Gln | His | Lys |
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| Tyr | Thr | Ser | Ile | Ala | Glu | Val | Gln | Ala | Gln | Met | Lys | Glu | Glu | Tyr | Leu |
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| | | | 165 | | | | | | 170 | | | | | 175 | |
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| | | 180 | | | | | 185 | | | | | 190 | | | |
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| | 195 | | | | | | 200 | | | | | 205 | | | |
| Thr | Asp | Ser | Ile | Asn | Ile | Leu | Ala | Asp | Val | Leu | Pro | Glu | Glu | Met | Pro |
| | 210 | | | | 215 | | | | | | 220 | | | | |
| Thr | Thr | Val | Leu | Gln | Ser | Met | Lys | Leu | Gly | Val | Asp | Val | Asn | Arg | His |
| | 225 | | | | 230 | | | | | 235 | | | | 240 | |
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<210> 4719
 <211> 589
 <212> DNA
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<210> 4720
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 <212> PRT
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 Ile Arg Lys Asn Phe Asp Glu Ala Ala Lys Val Leu Lys Phe Asn Cys
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 Glu Glu Asn Gln His Ser Asp Ser Cys Tyr Lys Leu Gly Ala Tyr Tyr
 65 70 75 80
 Val Thr Gly Lys Gly Gly Leu Thr Gln Asp Leu Lys Ala Ala Ala Arg
 85 90 95
 Cys Phe Leu Met Ala Cys Glu Lys Pro Gly Lys Lys Ser Ile Ala Ala
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 Cys His Asn Val Gly Leu Leu Ala His Asp Gly Gln Val Asn Glu Asp
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 Gly Gln Pro Asp Leu Gly Lys Ala Arg Asp Tyr Tyr Thr Arg Ala Cys

| | | | | | |
|-------------------------|---------------------|---------------------|-----|-----|--|
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| Asp Gly Gly Tyr Thr Ser | Ser Cys Phe Asn Leu | Ser Ala Met Phe Leu | | | |
| 145 | 150 | 155 | 160 | | |
| Gln Gly Ala Pro Gly Phe | Pro Lys Asp Met Asp | Leu Ala Cys Lys Tyr | | | |
| | 165 | 170 | 175 | | |
| Ser Met Lys Ala Cys Asp | Leu Gly His Ile Trp | Ala Cys Ala Asn Ala | | | |
| | 180 | 185 | 190 | | |
| Ser Arg Met Tyr | | | | | |
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 <212> DNA
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<211> 285

<212> PRT

<213> Homo sapiens

<400> 4722

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| Met | Asn | Arg | Leu | Pro | Asp | Asp | Tyr | Asp | Pro | Tyr | Ala | Val | Glu | Glu | Pro |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Ser | Asp | Glu | Glu | Pro | Ala | Leu | Ser | Ser | Ser | Glu | Asp | Glu | Val | Asp | Val |
| | 20 | | | | | | 25 | | | | | 30 | | | |
| Leu | Leu | His | Gly | Thr | Pro | Asp | Gln | Lys | Arg | Lys | Leu | Ile | Arg | Glu | Cys |
| | 35 | | | | | | 40 | | | | | 45 | | | |
| Leu | Thr | Gly | Glu | Ser | Glu | Ser | Ser | Ser | Glu | Asp | Glu | Phe | Glu | Lys | Glu |
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| Met | Glu | Ala | Glu | Leu | Asn | Ser | Thr | Met | Lys | Thr | Met | Glu | Asp | Lys | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Ser | Ser | Leu | Gly | Thr | Gly | Ser | Ser | Ser | Gly | Asn | Gly | Lys | Val | Ala | Thr |
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| Asp | Glu | Asp | Arg | Ala | Val | Gln | Val | Thr | Lys | Lys | Lys | Lys | Lys | Lys | Gln |
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| His | Lys | Ile | Pro | Thr | Asn | Asp | Glu | Leu | Leu | Tyr | Asp | Pro | Glu | Lys | Asp |
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| Asn | Arg | Lys | Lys | Arg | Arg | Val | His | Lys | Lys | Met | Arg | Ser | Asn | Arg | Glu |
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| Asp | Ala | Ala | Glu | Lys | Ala | Glu | Thr | Asp | Val | Glu | Glu | Ile | Tyr | His | Pro |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Val | Met | Cys | Thr | Glu | Cys | Ser | Thr | Glu | Val | Ala | Val | Tyr | Asp | Lys | Asp |
| | | | 260 | | | | | 265 | | | | | 270 | | |
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<213> Homo sapiens

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<211> 54
<212> PRT
<213> Homo sapiens

<400> 4724

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<211> 366

<212> DNA

<213> Homo sapiens

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<211> 122

<212> PRT

<213> Homo sapiens

<400> 4726

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 35 40 45
 His Met Cys Thr Gly Ala Cys Ala Cys Val Asn Thr Cys Ser His Val
 50 55 60
 Cys Thr Cys Xaa Ser Cys Pro Cys Xaa Tyr Val His Thr Cys Leu Cys
 65 70 75 80
 Met His Ala Cys Ile Ala Val Cys Pro Tyr Pro His Val Arg Ile His
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<210> 4728

<211> 328

<212> PRT

<213> Homo sapiens

<400> 4728

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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Glu | Gly | Arg | Val | Ala | Leu | Ala | Arg | Ala | Ala | Asp | Cys | Glu | Val | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Gln | Trp | Asp | Ser | Asp | Glu | Pro | Ile | Pro | Ala | Lys | Glu | Leu | Glu | Arg | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Val | Ala | Gly | Ala | His | Gly | Leu | Leu | Cys | Leu | Leu | Ser | Asp | His | Val | Asp |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Arg | Ile | Leu | Asp | Ala | Ala | Gly | Ala | Asn | Leu | Lys | Val | Ile | Ser | Thr |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Met | Ser | Val | Gly | Ile | Asp | His | Leu | Ala | Leu | Asp | Glu | Ile | Lys | Lys | Arg |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Gly | Ile | Arg | Val | Gly | Tyr | Thr | Pro | Asp | Val | Leu | Thr | Asp | Thr | Thr | Ala |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Glu | Leu | Ala | Val | Ser | Leu | Leu | Leu | Thr | Thr | Cys | Arg | Arg | Leu | Pro | Glu |
| | 115 | | | | | | 120 | | | | | 125 | | | |
| Ala | Ile | Glu | Glu | Val | Lys | Asn | Gly | Gly | Trp | Thr | Ser | Trp | Lys | Pro | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Trp | Leu | Cys | Gly | Tyr | Gly | Leu | Thr | Gln | Ser | Thr | Val | Gly | Ile | Ile | Gly |
| 145 | | | | | 150 | | | | | 155 | | | | 160 | |
| Leu | Gly | Arg | Ile | Gly | Gln | Ala | Ile | Ala | Arg | Arg | Leu | Lys | Pro | Phe | Gly |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Val | Gln | Arg | Phe | Leu | Tyr | Thr | Gly | Arg | Gln | Pro | Arg | Pro | Glu | Glu | Ala |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Ala | Glu | Phe | Gln | Ala | Glu | Phe | Val | Ser | Thr | Pro | Glu | Leu | Ala | Ala | Gln |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Ser | Asp | Phe | Ile | Val | Val | Ala | Cys | Ser | Leu | Thr | Pro | Ala | Thr | Glu | Gly |

| | | |
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| 210 | 215 | 220 |
| Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe | | |
| 225 | 230 | 235 |
| Ile Asn Ile Ser Arg Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln | | 240 |
| | 245 | 250 |
| Ala Leu Ala Ser Gly Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser | | 255 |
| | 260 | 265 |
| Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys | | 270 |
| | 275 | 280 |
| Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr | | 285 |
| | 290 | 295 |
| Met Ser Leu Leu Ala Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu | | 300 |
| 305 | 310 | 315 |
| Pro Met Pro Ser Glu Leu Lys Leu | | 320 |
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<211> 753

<212> DNA

<213> Homo sapiens

<400> 4729

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<212> PRT

<213> Homo sapiens

<400> 4730

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      35           40           45
Gln Asn Phe Leu Leu Glu Ser Asn Leu Gly Lys Lys Lys Tyr Glu Thr
      50           55           60
Glu Phe His Pro Gly Thr Thr Ser Phe Gly Met Ser Val Phe Asn Leu
65           70           75           80
Ser Asn Ala Ile Val Gly Ser Gly Ile Leu Gly Leu Ser Tyr Ala Met
      85           90           95
Ala Asn Thr Gly Ile Ala Leu Phe Ile Ile Leu Leu Thr Phe Val Ser
      100          105          110
Ile Phe Ser Leu Tyr Ser Val His Leu Leu Leu Lys Thr Ala Asn Glu
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<212> DNA

<213> Homo sapiens

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780

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<210> 4732
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4732
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20 25 30
Ala Arg Met Ala Gly His Val Ser Val Leu Val Ser His Phe Pro Pro
35 40 45
Ser Val Thr Tyr Leu Gly Ile Pro Gln Gly Leu Leu Glu Cys Asp Cys
50 55 60
Pro Leu Pro Ser Cys Leu Gly Tyr Lys Ser Trp Pro Tyr Val Pro Ala
65 70 75 80
Val Arg Gly Ser Gly Asn Pro Thr Gln Pro Pro Val Leu Gly Trp Ser
85 90 95
Val Ser Ile His Pro Leu Val Val Ile Glu Ala Ala Leu Pro Val Leu
100 105 110
Gly Glu Asp Ile Trp Ala Thr Arg Ala Pro Leu Ala Pro Ser Arg Arg
115 120 125
Lys

<210> 4733
<211> 543
<212> DNA
<213> Homo sapiens

<400> 4733
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tgg
543

<210> 4734
 <211> 181
 <212> PRT
 <213> Homo sapiens

<400> 4734
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 20 25 30
 Phe Phe Tyr Leu Ser Lys Lys Ile Ser Ile Pro Asn Asn Val Lys Leu
 35 40 45
 Gln Cys Val Ser Trp Asn Lys Glu Gln Gly Phe Ile Ala Cys Gly Gly
 50 55 60
 Glu Asp Gly Leu Leu Lys Val Leu Lys Leu Glu Thr Gln Thr Asp Asp
 65 70 75 80
 Ala Lys Leu Arg Gly Leu Ala Ala Pro Ser Asn Leu Ser Met Asn Gln
 85 90 95
 Thr Leu Glu Gly His Ser Gly Ser Val Gln Val Val Thr Trp Asn Glu
 100 105 110
 Gln Tyr Gln Lys Leu Thr Thr Ser Asp Glu Asn Gly Leu Ile Ile Val
 115 120 125
 Trp Met Leu Tyr Lys Gly Ser Trp Ile Glu Glu Met Ile Asn Asn Arg
 130 135 140
 Asn Lys Ser Val Val Arg Ser Met Ser Trp Asn Ala Asp Gly Gln Lys
 145 150 155 160
 Ile Cys Ile Val Tyr Glu Asp Gly Ala Val Ile Val Gly Ser Val Asp
 165 170 175
 Gly Asn Arg Ile Trp
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<210> 4735
 <211> 300
 <212> DNA
 <213> Homo sapiens

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<210> 4736
 <211> 93
 <212> PRT
 <213> Homo sapiens

<400> 4736

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          20          25          30
Lys Ser Gly Ala Ala Gly Gly Ser Ala Lys Ser Ser Ser Asn Gly Pro
          35          40          45
Val Ala Ser Ala Gln Tyr Val Ser Gln Ala Lys Ala Ser Ala Leu Gln
          50          55          60
Gln Gln Gln Tyr Tyr Gln Trp Tyr Gln Gln Asp Asn Tyr Ala Tyr Pro
65          70          75          80
Tyr Ser Tyr Tyr Tyr Pro Met Pro Pro Gly Pro Gly Met
          85          90

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<210> 4737

<211> 2602

<212> DNA

<213> Homo sapiens

<400> 4737

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420
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1020

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caaccttcag attccctgga gcctgagttt accaggaagt gccagtcctt gctgaaccgc
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1800
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2100
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<210> 4738
 <211> 756
 <212> PRT
 <213> Homo sapiens

<400> 4738

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Thr Met Trp Trp Glu Arg Asp Val Ser Ser Asp Arg Gln Glu Pro Gly Arg
 35           40           45
Arg Gly Arg Ser Trp Gly Leu Glu Gly Ser Gln Ala Leu Ser Gln Gln
 50           55           60
Ala Glu Val Ile Val Arg Gln Leu Gln Glu Leu Arg Arg Leu Glu Glu
 65           70           75           80
Glu Val Arg Leu Leu Arg Glu Thr Ser Leu Gln Gln Lys Met Arg Leu
 85           90           95
Glu Ala Gln Ala Met Glu Leu Glu Ala Leu Ala Arg Ala Glu Lys Ala
 100          105          110
Gly Arg Ala Glu Ala Glu Gly Leu Arg Ala Ala Leu Ala Gly Ala Glu
 115          120          125
Val Val Arg Lys Asn Leu Glu Glu Gly Arg Gln Arg Glu Leu Glu Glu
 130          135          140
Val Gln Arg Leu His Gln Glu Gln Leu Ser Ser Leu Thr Gln Ala His
 145          150          155          160
Glu Glu Ala Leu Ser Ser Leu Thr Ser Lys Ala Glu Gly Leu Glu Lys
 165          170          175
Ser Leu Ser Ser Leu Glu Thr Arg Arg Ala Gly Glu Ala Lys Glu Leu
 180          185          190
Ala Glu Ala Gln Arg Glu Ala Glu Leu Leu Arg Lys Gln Leu Ser Lys
 195          200          205
Thr Gln Glu Asp Leu Glu Ala Gln Val Thr Leu Val Glu Asn Leu Arg
 210          215          220
Lys Tyr Val Gly Glu Gln Val Pro Ser Glu Val His Ser Gln Thr Trp
 225          230          235          240
Glu Leu Glu Arg Gln Lys Leu Leu Glu Thr Met Gln Leu Leu Gln Glu
 245          250          255
Asp Arg Asp Ser Leu His Ala Thr Ala Glu Leu Leu Gln Val Arg Val
 260          265          270
Gln Ser Leu Thr His Ile Leu Ala Leu Gln Glu Glu Glu Leu Thr Arg
 275          280          285
Lys Val Gln Pro Ser Asp Ser Leu Glu Pro Glu Phe Thr Arg Lys Cys
 290          295          300
Gln Ser Leu Leu Asn Arg Trp Arg Glu Lys Val Phe Ala Leu Met Val
 305          310          315          320
Gln Leu Lys Ala Gln Glu Leu Glu His Ser Asp Ser Val Lys Gln Leu
 325          330          335
Lys Gly Gln Val Ala Ser Leu Gln Glu Lys Val Thr Ser Gln Ser Gln
 340          345          350
Glu Gln Ala Ile Leu Gln Arg Ser Leu Gln Asp Lys Ala Ala Glu Val
 355          360          365
Glu Val Glu Arg Met Gly Ala Lys Gly Leu Gln Leu Glu Leu Ser Arg

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370 375 380
 Ala Gln Glu Ala Arg Arg Trp Trp Gln Gln Gln Thr Ala Ser Ala Glu
 385 390 395 400
 Glu Gln Leu Arg Leu Val Val Asn Ala Val Ser Ser Ser Gln Ile Trp
 405 410 415
 Leu Glu Thr Thr Met Ala Lys Val Glu Gly Ala Ala Ala Gln Leu Pro
 420 425 430
 Ser Leu Asn Asn Arg Leu Ser Tyr Ala Val Arg Lys Val His Thr Ile
 435 440 445
 Arg Gly Leu Ile Ala Arg Lys Leu Ala Leu Ala Gln Leu Arg Gln Glu
 450 455 460
 Ser Cys Pro Leu Pro Pro Pro Val Thr Asp Val Ser Leu Glu Leu Gln
 465 470 475 480
 Gln Leu Arg Glu Glu Arg Asn Arg Leu Asp Ala Glu Leu Gln Leu Ser
 485 490 495
 Ala Arg Leu Ile Gln Gln Glu Val Gly Arg Ala Arg Glu Gln Gly Glu
 500 505 510
 Ala Glu Arg Gln Gln Leu Ser Lys Val Ala Gln Gln Leu Glu Gln Glu
 515 520 525
 Leu Gln Gln Thr Gln Glu Ser Leu Ala Ser Leu Gly Leu Gln Leu Glu
 530 535 540
 Val Ala Arg Gln Gly Gln Gln Glu Ser Thr Glu Glu Ala Ala Ser Leu
 545 550 555 560
 Arg Gln Glu Leu Thr Gln Gln Gln Glu Leu Tyr Gly Gln Ala Leu Gln
 565 570 575
 Glu Lys Val Ala Glu Val Glu Thr Arg Leu Arg Glu Gln Leu Ser Asp
 580 585 590
 Thr Glu Arg Arg Leu Asn Glu Ala Arg Arg Glu His Ala Lys Ala Val
 595 600 605
 Val Ser Leu Arg Gln Ile Gln Arg Arg Ala Ala Gln Glu Lys Glu Arg
 610 615 620
 Ser Gln Glu Leu Arg Arg Leu Gln Glu Glu Ala Arg Lys Glu Glu Gly
 625 630 635 640
 Gln Arg Leu Ala Arg Arg Leu Gln Glu Leu Glu Arg Asp Lys Asn Leu
 645 650 655
 Met Leu Ala Thr Leu Gln Gln Glu Gly Leu Leu Ser Arg Tyr Lys Gln
 660 665 670
 Gln Arg Leu Leu Thr Val Leu Pro Ser Leu Leu Asp Lys Lys Lys Ser
 675 680 685
 Val Val Ser Ser Pro Arg Pro Pro Glu Cys Ser Ala Ser Ala Pro Val
 690 695 700
 Ala Ala Ala Val Pro Thr Arg Glu Ser Ile Lys Gly Ser Leu Ser Val
 705 710 715 720
 Leu Leu Asp Asp Leu Gln Asp Leu Ser Glu Ala Ile Ser Lys Glu Glu
 725 730 735
 Ala Val Cys Gln Gly Asp Asn Leu Asp Arg Cys Ser Ser Ser Asn Pro
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 Gln Met Ser Ser
 755

<210> 4739

<211> 684

<212> DNA

<213> Homo sapiens

<400> 4739

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 120
 tagccctctc tctgtctcct ttaaactctg aacttctagg atgggagaat gggaactttt
 180
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 240
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 300
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 420
 ccaagcagga gggaaccatt agcagcctga ggagctggct ggctgggagc ctcggggacc
 480
 gccagcctt gctcccagct caccacaag atgtggacag ctcttgtgct catttggatt
 540
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<210> 4740

<211> 119

<212> PRT

<213> Homo sapiens

<400> 4740

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| Met | Leu | Leu | Ser | Arg | Ala | Gln | His | Ala | Leu | Trp | Pro | Pro | Trp | Ala | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Ala | Val | Thr | Gln | Leu | Ser | His | Leu | Arg | Gly | Ser | Leu | Asp | Ala | Ala |
| | | | | 20 | | | | 25 | | | | | | 30 | |
| Trp | Leu | Ser | Asp | Lys | Asp | Lys | Glu | Lys | Ile | Gln | Met | Ser | Thr | Arg | Ala |
| | | | | 35 | | | 40 | | | | | | | 45 | |
| Val | His | Ile | Leu | Trp | Val | Ser | Trp | Glu | Gln | Gly | Trp | Ala | Val | Pro | Glu |
| | | | | 50 | | | 55 | | | | | 60 | | | |
| Ala | Pro | Ser | Gln | Pro | Ala | Pro | Gln | Ala | Ala | Asn | Gly | Ser | Leu | Leu | Leu |
| | | | | 70 | | | | | | 75 | | | | 80 | |
| Gly | Gln | Gly | Ile | Cys | Gly | Gln | Glu | Ser | Thr | Leu | Val | Arg | Arg | Arg | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Ser | Asn | Thr | Gln | Pro | Cys | Leu | Arg | Ala | Pro | Ala | Val | Glu | Gly | Ser |
| | | | | 100 | | | | 105 | | | | | 110 | | |
| Gly | Arg | Val | Gln | Gly | Ala | Asp | | | | | | | | | |
| | | | | 115 | | | | | | | | | | | |

<210> 4741

<211> 411

<212> DNA

<213> Homo sapiens

<400> 4741

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 180
 aaagataaaa tttggttttt tgggggggaa aatttggaaca cccaccctc gggttttttt
 240
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<210> 4742

<211> 109

<212> PRT

<213> Homo sapiens

<400> 4742

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 20 25 30
 Pro Glu Gly Gly Val Ser Lys Phe Ser Pro Pro Lys Asn Gln Ile Leu
 35 40 45
 Ser Phe Ile Pro Pro Pro Phe Pro Pro Phe Gly Phe Phe Lys Lys Phe
 50 55 60
 Pro Ser Phe Phe Arg Lys Gly Lys Gly Gly Glu Arg Gly Gly Gln Arg
 65 70 75 80
 Lys Thr Pro Phe Phe Phe Leu Arg Lys Lys Arg Glu Lys Lys Lys Lys
 85 90 95
 Lys Glu Arg Lys Thr Pro Val Asp Leu Arg Glu Val Asn
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<210> 4743

<211> 473

<212> DNA

<213> Homo sapiens

<400> 4743

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 gagtgattga gtcccgttat ctgcagtatg aaaagaagac aaccctaaag gctcctgcag
 180
 gagatgggtc acagacccga gggaagatgt ctgaagggtg aaggaaatcc agcctgctcc
 240
 agaaaagcaa agcagatagc agtgggggtcg gaaagggtga cctgcagtcc acgttgctgg
 300

aagggcatgg cacagctcca cctgacctgg atctctctgc tattaatgac aaaagcatcg
 360
 tcaaaaagac gccacagtta gcaaaaacaa tatcaaagaa acctgagtca acatcatttt
 420
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 473

<210> 4744
 <211> 150
 <212> PRT
 <213> Homo sapiens

<400> 4744
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 Arg Val Ile Glu Ser Arg Tyr Leu Gln Tyr Glu Lys Lys Thr Thr Gln
 35 40 45
 Lys Ala Pro Ala Gly Asp Gly Ser Gln Thr Arg Gly Lys Met Ser Glu
 50 55 60
 Gly Gly Arg Lys Ser Ser Leu Leu Gln Lys Ser Lys Ala Asp Ser Ser
 65 70 75 80
 Gly Val Gly Lys Gly Asp Leu Gln Ser Thr Leu Leu Glu Gly His Gly
 85 90 95
 Thr Ala Pro Pro Asp Leu Asp Leu Ser Ala Ile Asn Asp Lys Ser Ile
 100 105 110
 Val Lys Lys Thr Pro Gln Leu Ala Lys Thr Ile Ser Lys Lys Pro Glu
 115 120 125
 Ser Thr Ser Phe Ser Ala Pro Arg Lys Lys Ser Pro Asp Leu Ser Glu
 130 135 140
 Ala Asn Gly Met Met Glu
 145 150

<210> 4745
 <211> 666
 <212> DNA
 <213> Homo sapiens

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 180
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 420

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 480
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 540
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 ccttaa
 666

<210> 4746
 <211> 221
 <212> PRT
 <213> Homo sapiens

<400> 4746
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 35 40 45
 Gln Asp Val Met Glu Gly Leu Ser Lys His Lys Gln Gln Arg Gly Thr
 50 55 60
 Thr Glu Ile Gly Met Ile Gly Ser Lys Pro Phe Ser Thr Val Lys Tyr
 65 70 75 80
 Lys Asn Glu Gly Pro Asp Tyr Arg Leu Tyr Lys Ser Glu Pro Glu Leu
 85 90 95
 Thr Thr Val Ala Glu Val Asp Glu Ser Asn Gly Glu Glu Lys Ser Glu
 100 105 110
 Pro Val Ser Glu Ile Glu Thr Ser Val Val Lys Gly Ser His Phe Pro
 115 120 125
 Val Gly Val Val Pro Pro Arg Ala Lys Ser Pro Thr Pro Glu Ser Ser
 130 135 140
 Thr Ile Ala Ser Tyr Val Thr Leu Arg Lys Thr Lys Lys Met Met Asp
 145 150 155 160
 Leu Arg Thr Glu Arg Pro Arg Ser Ala Val Glu Gln Leu Cys Leu Ala
 165 170 175
 Glu Ser Thr Arg Pro Arg Met Thr Val Glu Glu Gln Met Glu Arg Ile
 180 185 190
 Arg Arg Tyr Gln Gln Ala Cys Leu Arg Glu Lys Lys Lys Gly Leu Asn
 195 200 205
 Val Ile Gly Ala Ser Asp Gln Ser Pro Leu Gln Ser Pro
 210 215 220

<210> 4747
 <211> 1091
 <212> DNA
 <213> Homo sapiens

<400> 4747
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 420
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 480
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<212> PRT

<213> Homo sapiens

<400> 4748

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| Met | Glu | Glu | Glu | Thr | His | Thr | Asp | Ala | Lys | Ile | Arg | Ala | Glu | Asn | Gly |
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| Thr | Gly | Ser | Ser | Pro | Arg | Gly | Pro | Gly | Cys | Ser | Leu | Arg | His | Phe | Ala |
| | | 35 | | | | 40 | | | | | 45 | | | | |
| Cys | Glu | Gln | Asn | Leu | Leu | Ser | Arg | Pro | Asp | Gly | Ser | Ala | Ser | Phe | Leu |
| | 50 | | | | 55 | | | | | 60 | | | | | |
| Gln | Gly | Asp | Thr | Ser | Val | Leu | Ala | Gly | Val | Tyr | Gly | Pro | Ala | Glu | Val |
| 65 | | | | 70 | | | | 75 | | | | | 80 | | |
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<212> DNA
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660

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<212> DNA

<213> Homo sapiens

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<211> 335

<212> PRT

<213> Homo sapiens

<400> 4752

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| Phe | Arg | Gln | His | Leu | Leu | Ser | Pro | Ser | Lys | Tyr | His | Ser | Leu | Ser | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Leu | Leu | Asp | Ser | Leu | His | Val | Gln | Thr | Phe | Phe | His | Arg | Phe | Asp | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Ser | Leu | Trp | Pro | Arg | Ile | Thr | Phe | Leu | Leu | Pro | Pro | Ala | Pro | Pro | Pro |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Met | Leu | Ala | Ala | Pro | Gln | Leu | Ile | Gln | Arg | Pro | Val | Met | Leu | Thr | Lys |
| | | | | | | | | | | | | | | | |
| 65 | | | | | 70 | | | | | 75 | | | | 80 | |
| Phe | Thr | Pro | Thr | Thr | Leu | Pro | Thr | Ser | Gln | Asn | Ser | Ile | His | Pro | Val |
| | | | | | 85 | | | | | 90 | | | | 95 | |
| Arg | Val | Val | Asn | Gly | Gln | Thr | Ala | Thr | Ile | Ala | Lys | Thr | Phe | Pro | Met |

| | | | | | | | | | | | | | | | |
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| Ile | Thr | Pro | Pro | Ala | Ala | Pro | Lys | Pro | Lys | Arg | Glu | Glu | Asn | Pro | Gln |
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| Lys | Leu | Ala | Phe | Met | Val | Ser | Leu | Gly | Leu | Val | Thr | His | Asp | His | Leu |
| | | 180 | | | | | | 185 | | | | | 190 | | |
| Glu | Glu | Ile | Gln | Ser | Lys | Arg | Gln | Glu | Arg | Lys | Arg | Arg | Thr | Thr | Ala |
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| Asn | Pro | Val | Tyr | Ser | Gly | Ala | Val | Phe | Glu | Pro | Glu | Arg | Lys | Lys | Ser |
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| Ala | Val | Thr | Tyr | Leu | Asn | Ser | Thr | Met | His | Pro | Gly | Thr | Arg | Lys | Arg |
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| Ala | Asn | Glu | Glu | His | Trp | Pro | Lys | Gly | Asp | Ile | His | Glu | Asp | Phe | Cys |
| | | | 245 | | | | | | 250 | | | | | 255 | |
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| | | 260 | | | | | 265 | | | | | | 270 | | |
| Arg | Val | Tyr | His | Leu | Asp | Cys | Leu | Asp | Pro | Pro | Leu | Lys | Thr | Ile | Pro |
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| Glu | Glu | Ala | Ile | Pro | Trp | Xaa | Trp | Asn | Phe | Ser | Asn | Cys | Ser | Phe | Leu |
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| Tyr | Cys | Leu | Gln | Ser | Ser | Lys | Arg | Arg | Arg | Glu | Thr | Glu | Val | Thr | |
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<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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Pro Ile Glu Glu Lys Thr Val Glu Val Asn Asp Arg Lys Ala Glu Phe
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Leu Gln Glu Lys Leu Gln Glu Asn Gln Lys His Tyr Leu Ser Leu Lys
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<211> 2093

<212> DNA

<213> Homo sapiens

<400> 4755

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<212> PRT

<213> Homo sapiens

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| Leu | Glu | Ala | Pro | Ala | Ser | Gly | Leu | Ala | Phe | His | Pro | Ala | Arg | Asp | Leu |
| | | | 20 | | | | 25 | | | | | 30 | | | |
| Leu | Ala | Ala | Gly | Asp | Val | Asp | Gly | Asp | Val | Phe | Val | Phe | Ser | Tyr | Ser |
| | | 35 | | | | 40 | | | | 45 | | | | | |
| Cys | Gln | Glu | Gly | Glu | Thr | Lys | Glu | Leu | Val | Ile | Arg | Ser | His | Leu | Lys |
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| Ala | Cys | Arg | Ala | Val | Ala | Phe | Ser | Glu | Asp | Gly | Gln | Lys | Leu | Ile | Thr |
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| | | 35 | | | | 40 | | | | | | 45 | | | |
| Phe | Leu | Pro | Leu | Trp | Asp | Val | Ala | Ala | Thr | Asp | Phe | Gly | Gln | Thr | Asn |
| | 50 | | | | | 55 | | | | | 60 | | | | |
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<213> Homo sapiens

<400> 4762

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| Gly | Pro | Leu | Val | Pro | Thr | Leu | Pro | Phe | Pro | Leu | Arg | Lys | Pro | Arg | Lys |
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| Pro | Asn | Leu | Glu | Ser | His | Ser | His | Arg | Arg | Glu | Leu | Phe | Leu | Gln | Glu |
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<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 4764

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 Asp Glu Arg Val Ala Pro Asn Phe Lys Thr Glu Pro Ile Glu Thr Lys
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 Phe Tyr Glu Thr Lys Glu Glu Ser Tyr Ser Pro Ser Lys Asp Arg Asn
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 145 150 155 160
 Asp Ala Asp Ser Ser Ile Ser Val Leu Glu Ile His Ser Gln Lys Ala
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 Gln Ile Glu Glu Pro Asp Pro Pro Glu Met Glu Thr Ser Leu Asp Ser

| | | | | | |
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| Glu | Ser | Cys | Thr | Met | Lys |
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| Lys | Lys | Thr | Phe | Leu | Asp |
| | | | 245 | | 250 |
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| | | | 260 | | 265 |
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| Lys | Leu | Ala | Ser | Glu | Lys |
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| | | | 340 | | 345 |
| Ser | Lys | Phe | Lys | Tyr | Lys |
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| Glu | Asn | Thr | Glu | Ile | Thr |
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| | | | 385 | | 390 |
| Val | Leu | Glu | Pro | Glu | Asn |
| | | | 405 | | 410 |
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| Pro | Thr | Ala | Lys | Val | Ala |
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| Lys | Thr | Asp | Lys | Lys | Glu |
| | | | 465 | | 470 |
| Ser | Lys | Val | Ser | Lys | Val |
| | | | 485 | | 490 |
| Val | Leu | Gly | His | Val | Ala |
| | | | 500 | | 505 |
| Lys | Gly | Leu | Ala | Val | Lys |
| | | | 515 | | 520 |
| Lys | Arg | Lys | Val | Lys | Lys |
| | | | 530 | | 535 |
| Lys | Lys | Cys | Gly | Leu | Pro |
| | | | 545 | | 550 |
| Ser | Cys | Asp | Ser | Gly | Tyr |
| | | | 565 | | 570 |
| Ile | Ile | Pro | Asp | Gly | Glu |
| | | | 580 | | 585 |
| Leu | Cys | Glu | Lys | Leu | Glu |
| | | | 595 | | 600 |
| Lys | Lys | Lys | Glu | Arg | Ala |

| | | |
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| 625 | 630 | 635 |
| Glu Asp Gln Glu Glu Lys Lys Lys Asp Ser Lys Lys Ser Lys Ala Asn | | 640 |
| | 645 | 650 |
| Leu Leu Glu Arg Arg Ser Thr Arg Thr Arg Lys Cys Ile Ser Tyr Arg | | 655 |
| | 660 | 665 |
| Phe Asp Glu Phe Asp Glu Ala Ile Asp Glu Ala Ile Glu Asp Asp Ile | | 670 |
| | 675 | 680 |
| Lys Glu Ala Asp Gly Gly Gly Val Gly Arg Gly Lys Asp Ile Ser Thr | | 685 |
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<211> 280

<212> PRT

<213> Homo sapiens

<400> 4766

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 Ser Leu Gln His Val Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys
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<213> Homo sapiens

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| Glu | Gly | Asp | Gly | Glu | Pro | Tyr | Glu | Pro | Glu | Ser | Gly | Cys | Val | Glu | |
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| Ile | Pro | Gly | Leu | Ser | Glu | Glu | Glu | Asp | Pro | Ala | Pro | Ser | Arg | Lys | Ile |
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| Asp | Tyr | Asp | Arg | Arg | Asn | Glu | Asp | Val | Asp | Pro | Met | Ala | Ala | Ser | Ala |
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| Glu | Tyr | Glu | Leu | Glu | Lys | Arg | Val | Glu | Arg | Leu | Glu | Leu | Phe | Pro | Val |
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| Glu | Leu | Glu | Lys | Asp | Ser | Glu | Gly | Leu | Gly | Ile | Ser | Ile | Ile | Gly | Met |
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| Gly | Ala | Gly | Ala | Asp | Met | Gly | Leu | Glu | Lys | Leu | Gly | Ile | Phe | Val | Lys |
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| Asn | Asp | Leu | Leu | Val | Glu | Val | Asp | Gly | Thr | Ser | Leu | Val | Gly | Val | Thr |
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| Gln | Ser | Phe | Ala | Ala | Ser | Val | Leu | Arg | Asn | Thr | Lys | Gly | Arg | Val | Arg |
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| Phe | Met | Ile | Gly | Arg | Glu | Arg | Pro | Gly | Glu | Gln | Ser | Glu | Val | Ala | Gln |
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| Leu | Ile | Gln | Gln | Thr | Leu | Glu | Gln | Glu | Arg | Trp | Gln | Arg | Glu | Met | Met |
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| | | | 260 | | | | 265 | | | | | | 270 | | |
| Tyr | Ala | Thr | Asp | Glu | Asp | Glu | Glu | Leu | Ser | Pro | Thr | Phe | Pro | Gly | Gly |

| | | |
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| Ser Pro Val Asp Met Glu Pro Glu Lys Leu Val His Lys Phe Lys Glu | | |
| 305 | 310 | 315 |
| Leu Gln Ile Lys His Ala Val Thr Glu Ala Glu Ile Gln Gln Leu Lys | | |
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| | 340 | 345 |
| Lys Ala Gln Leu Glu Gln Ser Val Glu Glu Asn Lys Glu Arg Met Glu | | |
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| Lys Leu Glu Gly Tyr Trp Gly Glu Ala Gln Ser Leu Cys Gln Ala Val | | |
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| Asp Glu His Leu Arg Glu Thr Gln Ala Gln Tyr Gln Ala Leu Glu Arg | | |
| 385 | 390 | 395 |
| Lys Tyr Ser Lys Ala Lys Arg Leu Ile Lys Asp Tyr Gln Gln Lys Glu | | |
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| Ile Glu Phe Leu Lys Lys Glu Thr Ala Gln Arg Arg Val Leu Glu Glu | | |
| | 420 | 425 |
| Ser Glu Leu Ala Arg Lys Glu Glu Met Asp Lys Leu Leu Asp Lys Ile | | |
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<211> 1533

<212> DNA

<213> Homo sapiens

<400> 4769

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<211> 237

<212> PRT

<213> Homo sapiens

<400> 4770

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| 1 | | | | 5 | | | | 10 | | | | | 15 | | |
| Lys | Arg | Leu | His | Gln | Thr | His | Arg | Leu | Lys | Glu | Cys | Val | Ala | Pro | Val |
| | | 20 | | | | | | 25 | | | | 30 | | | |
| Leu | Ser | Val | Leu | Thr | Glu | Cys | Ala | Arg | Met | His | Arg | Pro | Ala | Arg | Lys |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Phe | Leu | Lys | Ala | Gln | Val | Leu | Pro | Pro | Leu | Arg | Asp | Val | Arg | Thr | Arg |
| 50 | | | | | 55 | | | | | 60 | | | | | |
| Pro | Glu | Val | Gly | Asp | Leu | Leu | Arg | Asn | Lys | Leu | Val | Arg | Leu | Met | Thr |
| 65 | | | | 70 | | | | | 75 | | | | 80 | | |
| His | Leu | Asp | Thr | Asp | Val | Lys | Arg | Val | Ala | Ala | Glu | Phe | Leu | Phe | Val |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Leu | Cys | Ser | Glu | Ser | Val | Pro | Arg | Phe | Ile | Lys | Tyr | Thr | Gly | Tyr | Gly |
| | | 100 | | | | | | 105 | | | | 110 | | | |
| Asn | Ala | Ala | Gly | Leu | Leu | Ala | Ala | Arg | Gly | Leu | Met | Ala | Gly | Gly | Arg |
| | 115 | | | | | 120 | | | | | | 125 | | | |
| Pro | Glu | Gly | Gln | Tyr | Ser | Glu | Asp | Glu | Asp | Thr | Asp | Thr | Asp | Glu | Tyr |
| 130 | | | | | 135 | | | | | 140 | | | | | |
| Lys | Glu | Ala | Lys | Ala | Ser | Ile | Asn | Pro | Val | Thr | Gly | Arg | Val | Glu | Glu |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 | | 150 | | 155 | | 160 | | | | | | | | | |
| Lys | Pro | Pro | Asn | Pro | Met | Glu | Gly | Met | Thr | Glu | Glu | Gln | Lys | Glu | His |
| | | | 165 | | | | | 170 | | | | | | 175 | |
| Glu | Ala | Met | Lys | Leu | Val | Thr | Met | Phe | Asp | Lys | Leu | Ser | Ser | Pro | Thr |
| | | | 180 | | | | | 185 | | | | | | 190 | |
| Ala | Pro | Phe | Pro | Asn | Arg | Asn | Arg | Val | Ile | Gln | Pro | Met | Gly | Met | Ser |
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| Pro | Arg | Gly | His | Leu | Thr | Ser | Leu | Gln | Asp | Ala | Met | Cys | Glu | Thr | Met |
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<211> 2653

<212> DNA

<213> Homo sapiens

<400> 4771

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 35 40 45
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 50 55 60
 Ile Ala Thr Arg Gly Val Val Gln Leu Phe Asn Ala Val Gln Lys His
 65 70 75 80
 Gln Lys Asn Val Asp Glu Lys Val Lys Glu Ala Gly Ser Ser Met Arg
 85 90 95
 Lys Arg Ala Lys Leu Ile Ser Thr Val Ser Lys Lys Asp Phe Ile Ser
 100 105 110
 Val Leu Arg Gly Met Asp Gly Ser Thr Asn Glu Thr Ala Ser Ser Arg
 115 120 125
 Lys Lys Pro Lys Ala Lys Gln Thr Glu Val Lys Ser Glu Glu Gly Pro
 130 135 140
 Gly Trp Thr Ile Leu Arg Asp Asp Phe Met Met Gly Ala Ser Met Lys
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 165 170 175
 Ala Ser Asp Ser Asp Thr
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 <213> Homo sapiens

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<210> 4774
 <211> 91
 <212> PRT

<213> Homo sapiens

<400> 4774

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Pro Asn Pro Ser Ser Leu Phe Pro Pro Ser Pro Gln Ala Arg Ala Ala
      35           40           45
Met Gly Trp Arg Val Leu Ala Trp Thr Gln His Pro Ile Ser Ser Ala
      50           55           60
Leu Ser Leu Asp Pro Ala Ser His Leu Leu Ser Ser Gln Gly Gly Gly
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Ser Trp Glu Pro His Pro Gln Pro Leu His Ala
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<210> 4775

<211> 433

<212> DNA

<213> Homo sapiens

<400> 4775

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<212> PRT

<213> Homo sapiens

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Leu Trp Leu His Cys Pro Pro Cys Tyr Phe Phe Glu Arg Ala Asn His
      35           40           45
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<211> 144

<212> PRT

<213> Homo sapiens

<400> 4778

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| Gly | Leu | Glu | Ser | Arg | Val | Arg | Gly | Leu | Ala | Ala | Glu | Asn | Gln | Glu | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg | Ala | Glu | Asn | Arg | Glu | Leu | Gly | Lys | Arg | Val | Gln | Ala | Leu | Gln | Glu |
| | | | 35 | | | | 40 | | | | | 45 | | | |
| Glu | Ser | Arg | Tyr | Leu | Arg | Ala | Val | Leu | Ala | Asn | Glu | Thr | Gly | Leu | Ala |
| | | | 50 | | | 55 | | | | 60 | | | | | |
| Arg | Leu | Leu | Ser | Arg | Leu | Ser | Gly | Val | Gly | Leu | Arg | Leu | Thr | Thr | Ser |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Leu | Phe | Arg | Asp | Ser | Pro | Ala | Gly | Asp | His | Asp | Tyr | Ala | Leu | Pro | Val |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Gly | Lys | Gln | Lys | Gln | Asp | Leu | Leu | Glu | Glu | Asp | Asp | Ser | Ala | Gly | Gly |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| Val | Cys | Leu | His | Val | Asp | Lys | Asp | Lys | Val | Ser | Val | Glu | Phe | Cys | Ser |

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| | 115 | | 120 | | 125 |
| Ala | Cys | Ala | Arg | Lys | Ala |
| | | Ser | Ser | Ser | Leu |
| | | | | Lys | Ile |
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 <212> DNA
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| Tyr Lys Glu Asp Pro Trp Leu Trp Asp Leu Glu Trp Asp Leu Gln Glu | | | |
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| Lys Leu Cys Pro Arg Leu Asp Asp Pro Ala Trp Thr Pro Gly Pro Ser | | | |
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| Leu Leu Ser Leu Gln Met Arg Val Thr Pro Lys Leu Met Ala Leu Thr | | | |
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| Thr Leu Glu Ser Ala Gly Val Val Cys Pro Tyr Arg Ala Ile Glu Ser | | | |
| 645 | 650 | 655 | |
| Leu Tyr Arg Lys His Cys Leu Glu Gln Gly Lys Gln Gln Leu Met Pro | | | |
| 660 | 665 | 670 | |
| Gln Glu Ala Gly Leu Ala Glu Glu Phe Leu Leu Thr Asp Asn Ser Ala | | | |
| 675 | 680 | 685 | |
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| 690 | 695 | 700 | |
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| Leu Thr Ala Arg Gly Gly Pro Lys Asp Thr Gln Pro Ser Tyr His His | | | |
| 725 | 730 | 735 | |
| Gly Asn Gly Pro Tyr Asn Asp Val Asp Ile Pro Gly Cys Trp Phe Phe | | | |
| 740 | 745 | 750 | |
| Lys Leu Pro His Lys Asp Gly Asn Ser Cys Asn Val Gly Ser Pro Phe | | | |
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| 770 | 775 | 780 | |
| Pro Gly Gly Ala Ser Gly Pro Arg Ala Leu Glu Ile Asn Lys Met Ile | | | |
| 785 | 790 | 795 | 800 |
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| 805 | 810 | 815 | |
| Trp Leu Pro Arg Ser Ala Leu Pro Arg Ala Val Ile Arg His Pro Asp | | | |

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| Arg | Ile | Ala | Gln | Tyr | Leu | Lys | Gly | Leu | Glu | Val | Leu | Glu | Leu | Gly | Gly |
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<211> 322

<212> PRT

<213> Homo sapiens

<400> 4786

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| Ile | Ile | Val | Ser | Ala | Gln | Leu | Leu | Asp | Asp | Tyr | Pro | Lys | Cys | Phe | Ile |
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| | | 115 | | | | | 120 | | | | | 125 | | | |
| Gln | Asn | Thr | Gly | Leu | Gly | Pro | Glu | Lys | Thr | Ser | Phe | Phe | Gln | Ala | Leu |
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| Val | Gln | Leu | Ile | Lys | Thr | Gly | Asp | Lys | Val | Gly | Ala | Ser | Glu | Ala | Thr |
| | | | 165 | | | | | 170 | | | | | 175 | | |
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| | | 180 | | | | | 185 | | | | | 190 | | | |
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<212> DNA
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900

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<210> 4788

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<213> Homo sapiens

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| Val | Glu | Thr | Met | Glu | Gly | Pro | Pro | Arg | Arg | Thr | Cys | Arg | Ser | Pro | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Gly | Pro | Ser | Ser | Ser | Ile | Gly | Ser | Pro | Gln | Ala | Ser | Ser | Pro | Pro |
| | | 35 | | | | | 40 | | | | | 45 | | | |
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| Val | Leu | Val | Asp | Glu | Glu | Ser | Gln | Arg | Glu | Pro | Gly | Ala | Ser | Gly | Ala |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Pro | Gly | Gln | Lys | Lys | Cys | Tyr | Ser | Cys | Pro | Val | Cys | Ser | Arg | Val | Phe |
| | | | 85 | | | | | | 90 | | | | | 95 | |
| Glu | Tyr | Met | Ser | Tyr | Leu | Gln | Arg | His | Ser | Ile | Thr | His | Ser | Glu | Val |
| | | 100 | | | | | | 105 | | | | | 110 | | |
| Lys | Pro | Phe | Glu | Cys | Asp | Ile | Cys | Gly | Lys | Ala | Phe | Lys | Arg | Ala | Ser |
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| His | Leu | Ala | Arg | His | His | Ser | Ile | His | Leu | Ala | Gly | Gly | Gly | Arg | Pro |
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| Ala | Gln | His | Ser | Arg | Val | His | Ser | Gly | Glu | Arg | Pro | Phe | Gln | Cys | Pro |
| | | | 165 | | | | | 170 | | | | | 175 | | |
| His | Cys | Pro | Arg | Arg | Phe | Met | Glu | Gln | Asn | Thr | Leu | Gln | Lys | His | Thr |
| | | 180 | | | | | 185 | | | | | | 190 | | |
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<211> 1515

<212> DNA

<213> Homo sapiens

<400> 4789

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Thr Phe Glu Leu Phe Leu Thr Ile Ile Asp Gly Pro Ala Asn Tyr Asn
 50           55           60
Val Asp Leu Pro Phe Met Tyr Ser Ile Thr Tyr Ala Ala Phe Ala Ile
 65           70           75           80
Ile Ala Thr Leu Leu Met Leu Asn Leu Leu Ile Ala Met Met Gly Asp
 85           90           95
Thr His Trp Arg Val Ala His Glu Arg Asp Glu Leu Trp Arg Ala Gln
100           105           110
Ile Val Ala Thr Thr Val Met Leu Glu Arg Lys Leu Pro Arg Cys Leu
115           120           125
Trp Pro Arg Ser Gly Ile Cys Gly Arg Glu Tyr Gly Leu Gly Asp Arg
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Trp Phe Leu Arg Val Glu Asp Arg Gln Asp Leu Asn Arg Gln Arg Ile
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Gln Arg Tyr Ala Gln Ala Phe His Thr Arg Gly Ser Glu Asp Leu Asp
165           170           175
Lys Asp Ser Val Glu Lys Leu Glu Leu Gly Cys Pro Phe Ser Pro His
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195           200           205
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<211> 4481

<212> DNA

<213> Homo sapiens

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 Asn Asn Phe Cys Thr Ala Lys Glu Thr Ile Asn Arg Val Asp Arg Gln

| | | |
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| Pro Thr Glu Trp Glu Lys Val Leu Ala Trp Glu Lys Ile Phe Ser Asn | | |
| 145 | 150 | 155 |
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<211> 118

<212> PRT

<213> Homo sapiens

<400> 4794

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Asp Thr Pro Glu Ala Lys Cys Ser Met Gln Gln Pro Gly Ile Gln Ala
      35           40           45
Thr Ser Ser Val Ala Gly Arg Gln Pro Gly Ala Phe Ser Glu Glu Lys
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Gly Pro Val Ile Ile Pro Gln Met Leu Leu Glu Leu Trp Ala Gln Gly
65           70           75           80
Asn Arg Pro Ile Met Val Leu Pro Glu Gly Leu His Leu Leu Tyr Thr
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Arg Ala His Val Thr Ile
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<211> 2117

<212> DNA

<213> Homo sapiens

<400> 4795

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<210> 4796

<211> 541

<212> PRT

<213> Homo sapiens

<400> 4796

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Val Glu Gln Ala Leu Val Ala Phe Ile Ser Cys Gly Ser Arg Pro Ser
      35           40           45
Gly Ser Ser Glu Leu Arg Ala Gln Ala Cys Thr Ala His Ser Ala Gly
      50           55           60
Val Pro Gly Leu Ser Ile Pro Thr Ser Ser Trp Leu Pro Leu Met Lys
65           70           75           80
Gly Pro Pro Glu Val Ala Gln Ser Asn Ile Gln Thr Gln Pro Val Asn
      85           90           95
Arg Glu Met Asp Ala Ala Gly Phe Asp Phe Ser Leu Pro Cys Thr Gln
      100          105          110
Lys Leu Thr Gln Asn Gly Thr Arg Ser Gln Trp Gly Leu Ser Leu Pro
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Ile Leu Lys Lys Thr Phe Ser Thr Arg Leu Gln Asn Ser Asp Trp Phe
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Pro Pro Gln Asp Lys Gln Pro Ser Ile Met Lys Asp Gln His Cys Met
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<210> 4797

<211> 2848

<212> DNA

<213> Homo sapiens

<400> 4797

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<400> 4798

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| Phe | Glu | Ser | Phe | Leu | Asp | Asp | Glu | Glu | Asp | Leu | Asp | Val | Lys | Ala | Gly |
| | 35 | | | | | 40 | | | | | 45 | | | | |
| Gly | Gly | Cys | Val | Met | Thr | Ile | Gly | Glu | Met | Leu | Arg | Ser | Phe | Leu | Thr |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Lys | Leu | Glu | Trp | Phe | Ser | Thr | Leu | Phe | Pro | Arg | Ile | Pro | Val | Pro | Val |
| 65 | | | | 70 | | | | | 75 | | | | | 80 | |
| Gln | Lys | Asn | Ile | Asp | Gln | Gln | Ile | Lys | Thr | Arg | Pro | Arg | Lys | Ile | Lys |
| | | 85 | | | | | | 90 | | | | | 95 | | |
| Lys | Asp | Gly | Lys | Glu | Gly | Ala | Glu | Glu | Ile | Asp | Arg | His | Val | Glu | Arg |
| | 100 | | | | | | 105 | | | | | 110 | | | |
| Arg | Arg | Ser | Arg | Ser | Pro | Arg | Arg | Ser | Leu | Ser | Pro | Arg | Arg | Ser | Pro |
| | 115 | | | | | 120 | | | | | 125 | | | | |
| Arg | Arg | Ser | Arg | Ser | Arg | Ser | His | His | Arg | Glu | Gly | His | Gly | Ser | Ser |
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| Ser | Phe | Asp | Arg | Glu | Leu | Glu | Arg | Glu | Lys | Glu | Arg | Gln | Arg | Leu | Glu |
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| Arg | Glu | Ala | Lys | Glu | Arg | Glu | Lys | Glu | Arg | Arg | Ser | Arg | Ser | Ile | |
| | | 165 | | | | | 170 | | | | | 175 | | | |
| Asp | Arg | Gly | Leu | Glu | Arg | Arg | Arg | Ser | Arg | Ser | Arg | Glu | Arg | His | Arg |
| | 180 | | | | | | 185 | | | | | 190 | | | |
| Ser | Arg | Ser | Arg | Ser | Arg | Asp | Arg | Lys | Gly | Asp | Arg | Arg | Asp | Arg | Asp |
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| Arg | Glu | Arg | Glu | Lys | Glu | Asn | Glu | Arg | Gly | Arg | Arg | Arg | Asp | Arg | Asp |
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| Tyr | Asp | Lys | Glu | Arg | Gly | Asn | Glu | Arg | Glu | Lys | Glu | Arg | Glu | Arg | Ser |
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| Arg | Glu | Arg | Ser | Lys | Glu | Gln | Arg | Ser | Arg | Gly | Glu | Val | Glu | Glu | Lys |
| | | 245 | | | | | | 250 | | | | | 255 | | |
| Lys | His | Lys | Glu | Asp | Lys | Asp | Asp | Arg | Arg | His | Arg | Asp | Asp | Lys | Arg |
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| Asp | Ser | Lys | Lys | Glu | Lys | Lys | His | Ser | Arg | Ser | Arg | Ser | Arg | Glu | Arg |

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<211> 358

<212> DNA

<213> Homo sapiens

<400> 4799

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<210> 4800

<211> 119

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<213> Homo sapiens

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 Ala Gln Pro His Leu Gln Val Val Arg Gln Arg Ser Pro Pro Ala Ser
 50 55 60
 Trp Ser Pro Pro Pro Arg Ala Leu Ser His Val Phe Leu Phe Gly Asp
 65 70 75 80
 Arg Pro Phe Trp Trp Val His Glu Ser Gly Tyr Tyr Ser Gln Ala Pro

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 85 | | 90 | | 95 | | | | | | | | | | |
| Ala | Gln | Val | His | Gln | Phe | Pro | Ser | Ser | Cys | Glu | Thr | Gly | Pro | Gly | Ser |
| | 100 | | | | | | | 105 | | | | | 110 | | |
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